Huntleigh
HEALTHCARE

Mattress and Seat Systems
Service Manual

SER0005

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CHAPTER 1

INTRODUCTION

1 About This Manual

Huntleigh Healthcare strongly recommend that their equipment is only serviced by trained personnel and provide courses for customers who wish to become licensed to service their own equipment. In no event will Huntleigh Healthcare be responsible for any service performed by customers or third parties.

This manual contains information on maintenance, servicing, repair, troubleshooting and testing for the range of pressure relief mattress and seat systems shown in Table 1. The information in this handbook is limited to the mattresses and seat cushions. The pumps for this range of systems are described in the appropriate service manual.

Mattress replacements (MR), are a replacement for the normal bed mattress. Overlays (OL) are placed on top of a normal bed mattress

Read and understand this manual before attempting to service or repair the equipment.

Warnings, Cautions and Notes

WARNINGS given in this manual identify possible hazards in procedures or conditions which, if not correctly followed, could result in death, injury or other serious adverse reactions.

CAUTIONS given in this manual identify possible hazards in procedures or conditions which, if not correctly followed, could result in equipment failure or damage.

Notes given in this manual are used to explain or amplify a procedure or condition.

WARNING: BEFORE PERFORMING ANY SERVICE OR MAINTENANCE PROCEDURES, ENSURE THAT THE EQUIPMENT HAS BEEN ADEQUATELY DECONTAMINATED.

CAUTION: Do not use hypercarbonate and phenolic based cleaning solutions.

CAUTION: Ensure the system is clean and dry prior to storage.

Note: *Store the systems in the protective bags provided.*

2 General Description

The mattress replacement, overlays and seat systems identified in Table 1 are designed specifically to aid in the prevention, treatment and management of pressure ulcers.

They are air-filled, alternating pressure mattress and seat systems powered by air pumps. Some of the pumps provide an option of microprocessor aided control and sound alarm functions and have LED indications on the front panel.

The mattresses can be used on standard hospital and normal domestic beds. The seat cushions can be used on standard hospital and normal domestic chairs.

Table 1 - Mattresses and Seat Pads included in this service manual

Product	Type[(a)]	Part Number	Figure Number
Alpha Active (Dartex Cover, USA)	MR	400001DAR	Chap 3, Page 2, Fig 6
Alpha Active (Dartex Cover, German)	OL	400002DAR	Chap 3, Page 3, Fig 7
Alpha Active (Advantex Cover, German)	MR	400003ADV	Chap 3, Page 2, Fig 6
Alpha Active (Dartex Cover, German)	MR	400003DAR	Chap 3, Page 2, Fig 6
Alpha Relief (Dartex Cover)	MR	402001DAR	Chap 3, Page 6, Fig 9
Alpha Relief (Hairnet Cover, USA)	MR	402003HN	Chap 3, Page 6, Fig 9
Alpha Trancell II	OL	401001	Chap 3, Page 8, Fig 10
Alpha Trancell II (German)	OL	401002	Chap 3, Page 8, Fig 10
Alpha Trancell II (Ventilated)	OL	401003	Chap 3, Page 8, Fig 10
Alpha Trancell II (Without Cover)	OL	401007	Chap 3, Page 8, Fig 10
Alpha Trancell (ICC13)	Seat	IC004	Chap 3, Page 18, Fig 15
AlphaXcell (Studded Cover, Euro)	OL	IC087	Chap 3, Page 10, Fig 11
AlphaXcell (Zipped Cover, Euro)	OL	IC137	Chap 3, Page 10, Fig 11
AlphaXcell (Studded Cover, USA)	OL	IC076	Chap 3, Page 10, Fig 11
AlphaXcell Double Mattress	OL	632001	Chap 3, Page 12, Fig 12
Aura	Seat	403001	Chap 3, Page 19, Fig 16
Turbo-Puls (Standard Cover)	OL	BB27001	Chap 3, Page 14, Fig 13
Turbo-Puls (Luxury Cover)	OL	BB27004	Chap 3, Page 14, Fig 13
Turbo-Puls (Standard Cover)	MR	BB27002	Chap 3, Page 14, Fig 13
Turbo-Puls	Seat	BB27003	Chap 3, Page 20, Fig 17
ICT/6R Standard	OL	IC001	Chap 3, Page 5, Fig 8
ICT18 (Harada)	OL	IC044	Chap 3, Page 16, Fig 14
ICT18 (Sanse Do)	OL	IC109	Chap 3, Page 16, Fig 14
ICT18 (Taiwan)	OL	IC116	Chap 3, Page 16, Fig 14
ICT18 (Ventilated, Harada)	OL	IC120	Chap 3, Page 16, Fig 14

a. Mattress Type: MR = Mattress Replacement, OL = Mattress Overlay

3 Mattress Overlay Systems (OL)

A typical mattress overlay (OL) system is shown in Figure 1. It includes a base sheet, alternating and static cells (which are individually replaceable), a cover, air inlet tubes (with connectors where applicable) and a Cardiopulmonary Resuscitation (CPR) pull tag (also referred to as a Rapid Deflate stopper). The cell configurations are detailed in Table 2.

The AlphaXcell Double Mattress system is a double inflatable mattress overlay, which provides static pressure to one side and alternating pressure relief to the other side. The static and alternating sides of the mattress can be set up on either side of the bed depending on customer requirements.

The Trancell system is an exception. The cells for the Alpha Trancell system are not individual replaceable cells but are a one-piece manufactured item and can only be replaced as a complete item.

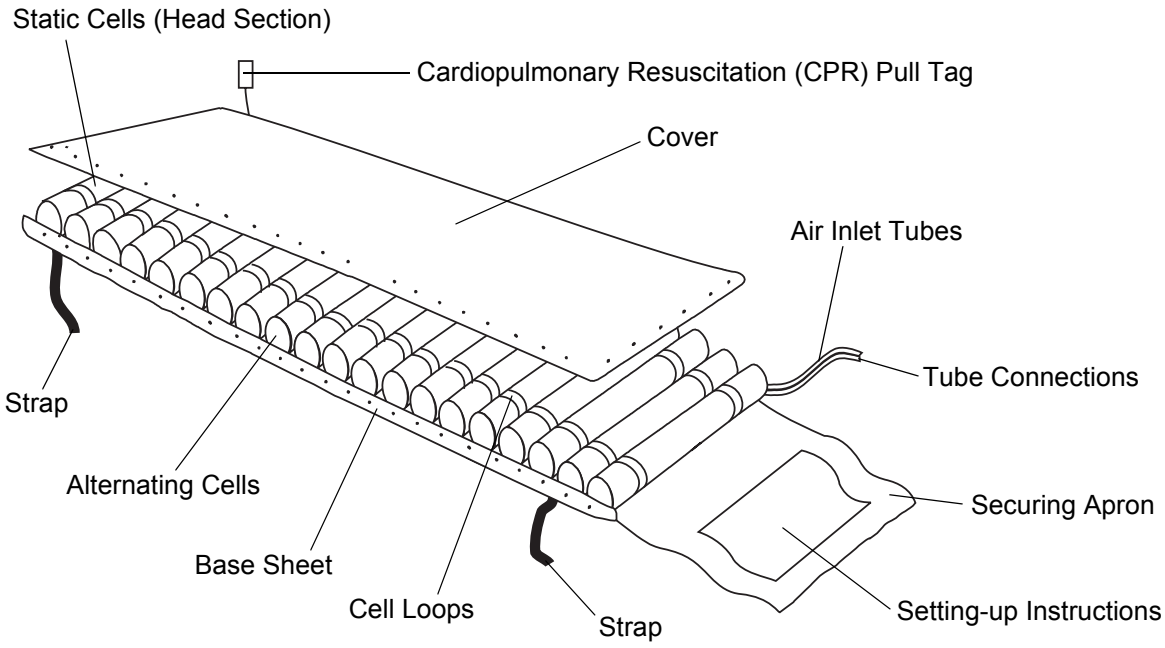


Figure 1 - Typical Mattress Overlay (OL) System

4 Mattress Replacement Systems (MR)

A typical mattress replacement (MR) system is shown in Figure 2. The MR systems are basically the same configuration as the OL systems with the addition of a foam base which replaces the normal bed mattress. The foam base provides a safety and transport function should the air supply fail or the alternating cells deflate. The cell configurations are detailed in Table 2.

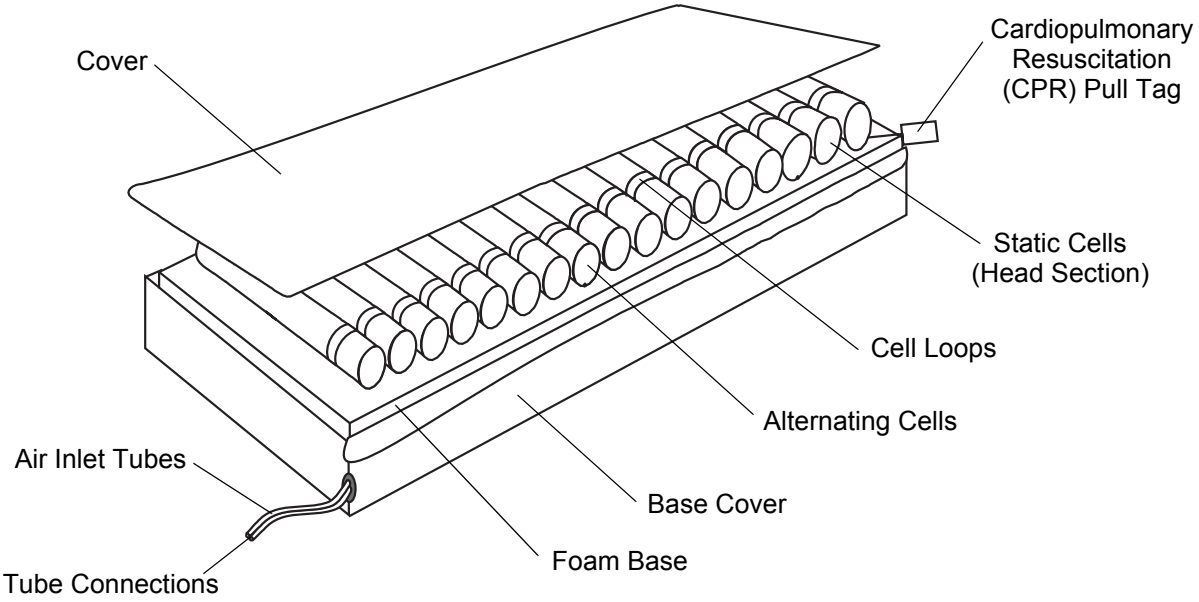


Figure 2 - Typical Mattress Replacement (MR) System

5 Seating Systems

A typical seating system is shown in Figure 3. The seat includes a base sheet, alternating cells, a cover and air inlet tubes (with connectors where applicable).The cell configurations are detailed in Table 2.

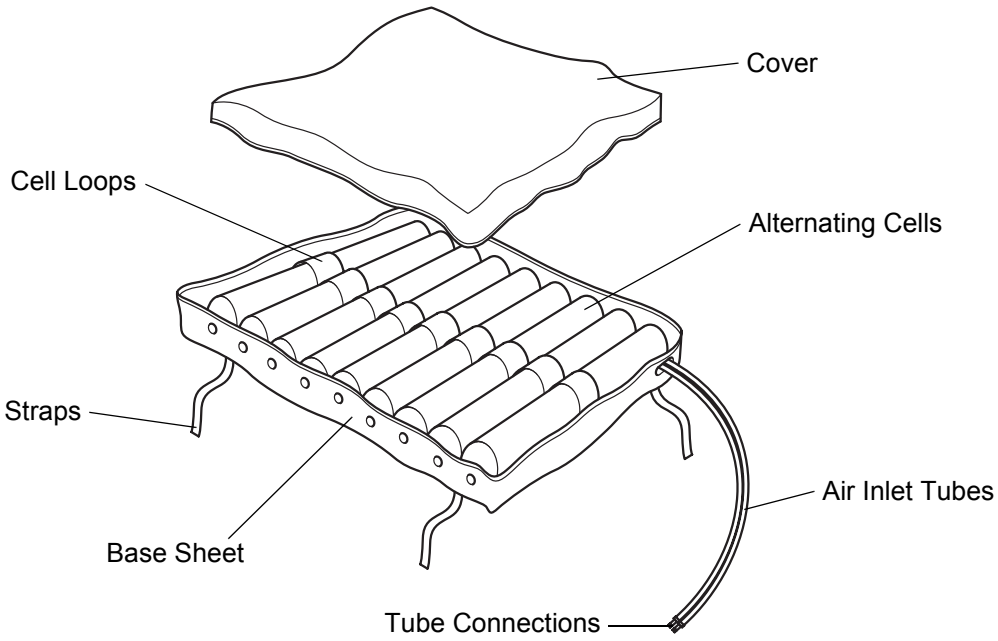


Figure 3 - Typical Seating System

Table 2 - Static and Alternating Cell Configurations

Product	Mattress Type[a]	Total Number of Cells	Alternating Cells	Static Cells
Alpha Active	MR	17[b]	14	3
Alpha Active (German)	OL	17[b]	14	3
Alpha Relief	MR	17	17	0
Alpha Trancell II	OL	16	14	2
Alpha Trancell II (Ventilated)	OL	16	14	2
Alpha Trancell II (Without Cover)	OL	16	14	2
Alpha Trancell (ICC13)	Seat	9	9	0
AlphaXcell (Studded/Zipped Cover)	OL	20	17	3
AlphaXcell Double Mattress	OL	20 + 20[c]	17 + 0[c]	3 + 20[c]
Aura	Seat	9	9	0
Turbo-Puls	OL	20	20	0
Turbo-Puls	MR	20	20	0
Turbo-Puls	Seat	9	9	0
ICT/6R Standard	OL	20	20	0
ICT18	OL	18	15	3
ICT18 (Ventilated, Harada)	OL	18	15	3

a. Mattress Type: MR = Mattress Replacement, OL = Mattress Overlay

b. The Alpha Active system has 8 ventilated cells and 9 non-ventilated cells.

c. The AlphaXcell Double Mattress has 20 cells on each side. On one side 17 cells are alternating and 3 are static, and on the other side all 20 cells are static.

6 Operating Principles

Refer to Figure 4 for a typical pneumatic system diagram and cell inflation cycle, and Table 2 for the actual cell configurations.

All pumps have two pressurised air outlets. Air from the outlets is fed to separate cells or groups of cells in the mattress or seat cushion via a rotary valve.

The mattress or seat cushion support cells are continuously inflated and deflated during a ten minute cycle. During the cycle, air is pumped from one outlet to cells “A” (or “B”) for 4 minutes and 10 seconds. This is followed by a period of 50 seconds when air is pumped from both outlets to cells “A” and “B”. Subsequently, air is pumped from the other outlet to cells “B” (or “A”) for 4 minutes and 10 seconds, and then a further 50 seconds with air from both outlets to cells “A” and “B”. During the period when air is pumped from an outlet to one group of cells, the second set of cells is slowly vented to atmosphere, causing them to reduce pressure.

In some of the mattress replacements or overlays, there is a third set of cells labelled “C”, which are supplied from a static feed. This static feed “C” is generated by two partial non-return valves (in the mattress manifold assembly) from alternating feeds “A” and “B”, and is therefore never at zero pressure. Where fitted, the “C” cells are normally in the head section of the mattress, to provide a stable pillow section and prevent the patient’s head from rising and falling.

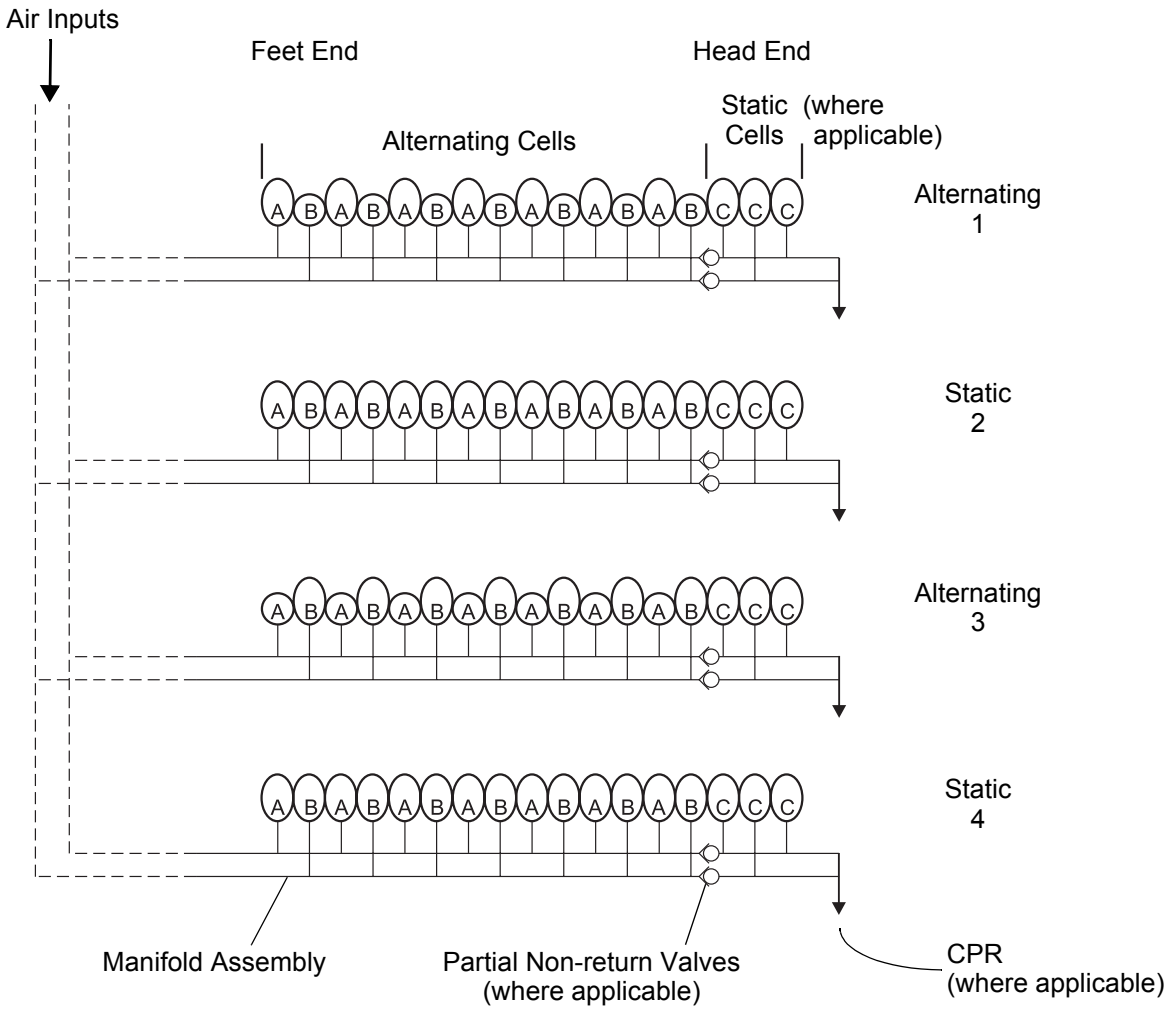


Figure 4 - Typical Mattress Pneumatic Diagram and Cell Inflation Cycle

7 Rapid Deflation of the Overlay or Mattress Replacement

Most, but not all, mattress replacement and overlay systems have a cardiopulmonary resuscitation (CPR) or Rapid Deflate plug to allow rapid deflation of the mattress replacement or overlay system. None of the seat systems have a CPR (or Rapid Deflate) plug.

The CPR (or Rapid Deflate) plug is located at the head end of the overlay or mattress replacement, on the same side as the tubeset (refer to Figure 5). For rapid deflation of the overlay or mattress replacement in an emergency, pull the CPR (or Rapid Deflate) tag to remove the CPR (or Rapid Deflate) plug from the manifold.

To re-inflate the overlay or mattress replacement, replace the CPR (or Rapid Deflate) plug securely, reconnect the manifold tubes to the pump, and switch on.

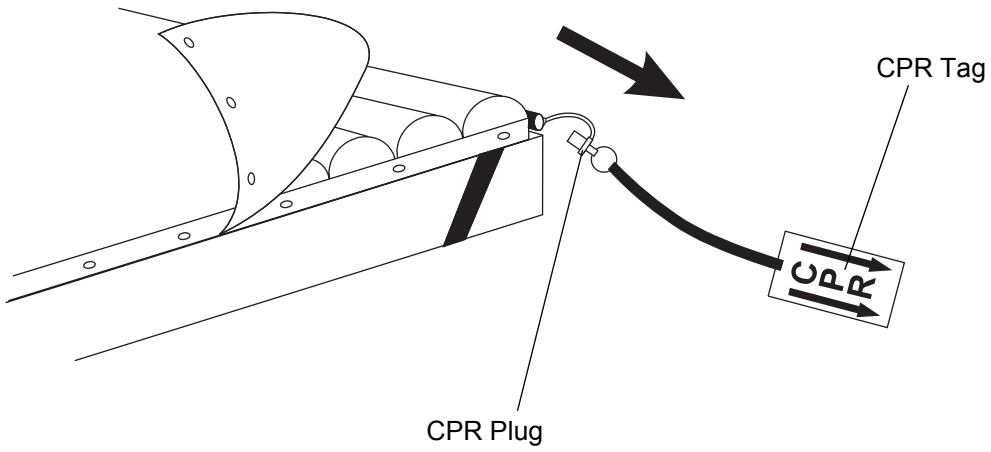


Figure 5 - Cardiopulmonary Resuscitation (CPR) or Rapid Deflate Plug

CHAPTER 2

MAINTENANCE

1 Mattress/Seat System Service

To carry out a service on the mattress or seat system, do the following:

1.1 Carry out the Mattress/Seat System Maintenance Checks (Refer to Page 1, Section 2).

1.2 Carry out the Pressure and Function Test on the mattress or seat system in accordance with Chapter 5, Page 1, Section 1.

2 Mattress/Seat System Maintenance Checks

If any parts are found to be damaged they must be replaced in accordance with the procedures detailed in Chapter 3, Repair.

Note: *Some of the items may not be applicable to a particular model of mattress or seat system.*

2.1 Visually inspect the following for damage, wear and potential faults:

• Base and top cover	Check for tears, staining, clarity of printed labels.
• Base / top cover zip	Check the zip runs freely and condition of zip teeth.
• Anti-slip pads	Check for damage.
• Fixing straps	Check condition and security.
• Loop base sheet	Check for broken/torn loops.
• Foam block	Check condition.
• Connectors	Check for damage and security.
• Cells	Check for damage and security.
• Manifold	Check for damage and security.
• Non-return valves	Check for condition.
• Turn valves	Check operation
• Press studs	Check condition.
• CPR (or Rapid Deflate) plug	Check condition and operation.

CHAPTER 3

REPAIR

1 General

This chapter details the repair procedures for the range of mattress and seat systems identified in Chapter 1, Page 2, Table 1. All repairs should be carried out by Huntleigh approved service personnel.

The repair procedures in this chapter are general and not unique to a product. Refer to Table 3 first to identify the relevant assembly drawing and parts list for the product being repaired, and then refer to them whilst carrying out the repair procedures detailed in Section 3 onwards of this chapter.

It is easier to carry out the repair procedures if the mattress or seat system is fully deflated first. Disconnect the tubeset between the mattress or seat system and the pump to deflate it.

After carrying out a service or any repairs on the mattress or seat system, but before installing the top cover, check the following:

1.1 All press studs on the mattress, overlay or seat system are connected.

1.2 All cells are evenly positioned in their loop straps. The repair will normally have disturbed the position of the cells, and they should be re-positioned evenly.

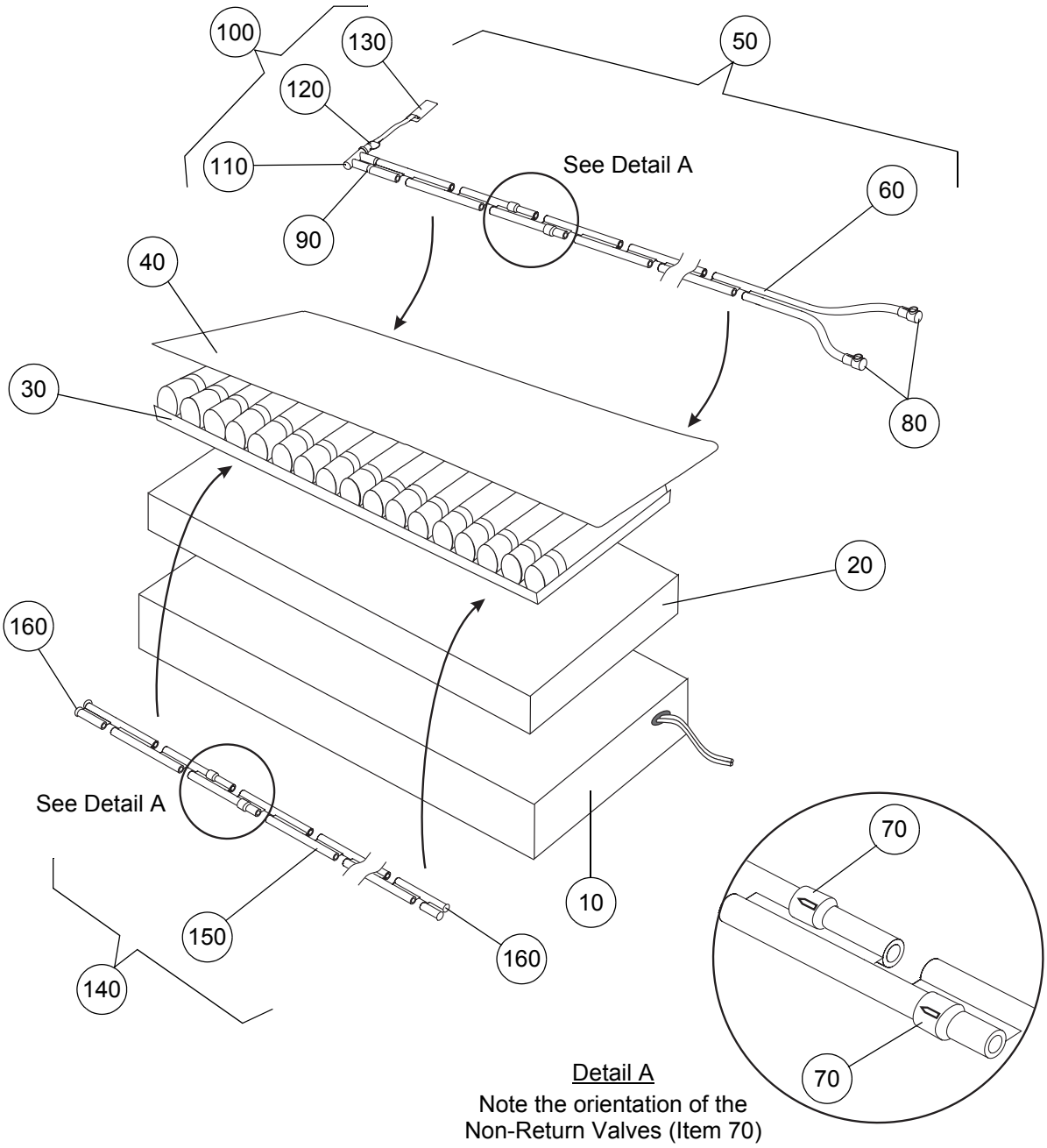
After carrying out a service or any repairs, the mattress or seat system must be tested for serviceability, by carrying out the Pressure and Function Test on the mattress or seat system in accordance with Chapter 5, Page 1, Section 1.

2 Product Assembly Drawings and Parts Lists

Refer to Table 3 for the assembly drawing and parts list for each mattress or seat system.

Table 3 - Product Assemblies and Parts Lists

Product	Assembly Drawing	Parts List
Alpha Active Mattress Replacement (MR)	Figure 6	Table 4
Alpha Active Mattress Overlay (OL)	Figure 7	Table 4
Alpha Relief Mattress Replacement (MR)	Figure 9	Table 6
Alpha Trancell II Mattress Overlay (OL)	Figure 10	Table 7
Alpha Trancell Seat	Figure 15	Table 12
AlphaXcell Mattress Overlay (OL)	Figure 11	Table 8
AlphaXcell Double Mattress Overlay (OL)	Figure 12	Table 9
Aura Seat	Figure 16	Table 13
Turbo-Puls Mattress Replacement (MR)	Figure 13	Table 10
Turbo-Puls Mattress Overlay (OL)	Figure 13	Table 10
Turbo-Puls Seat	Figure 17	Table 14
ICT/6R Mattress Overlay (OL)	Figure 8	Table 5
ICT18 Mattress Overlay (OL)	Figure 14	Table 11



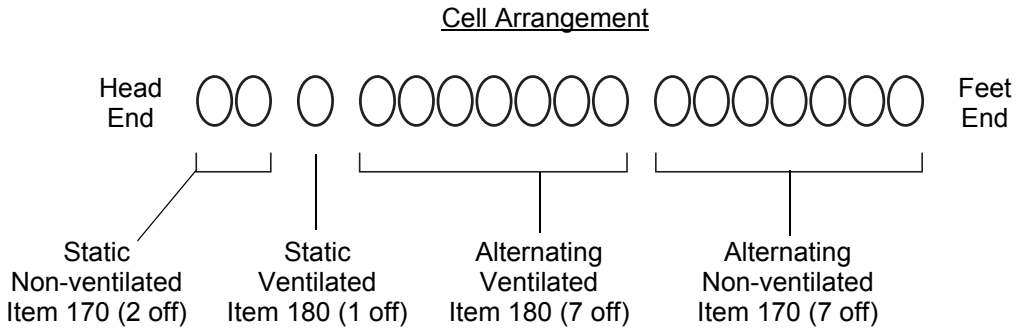
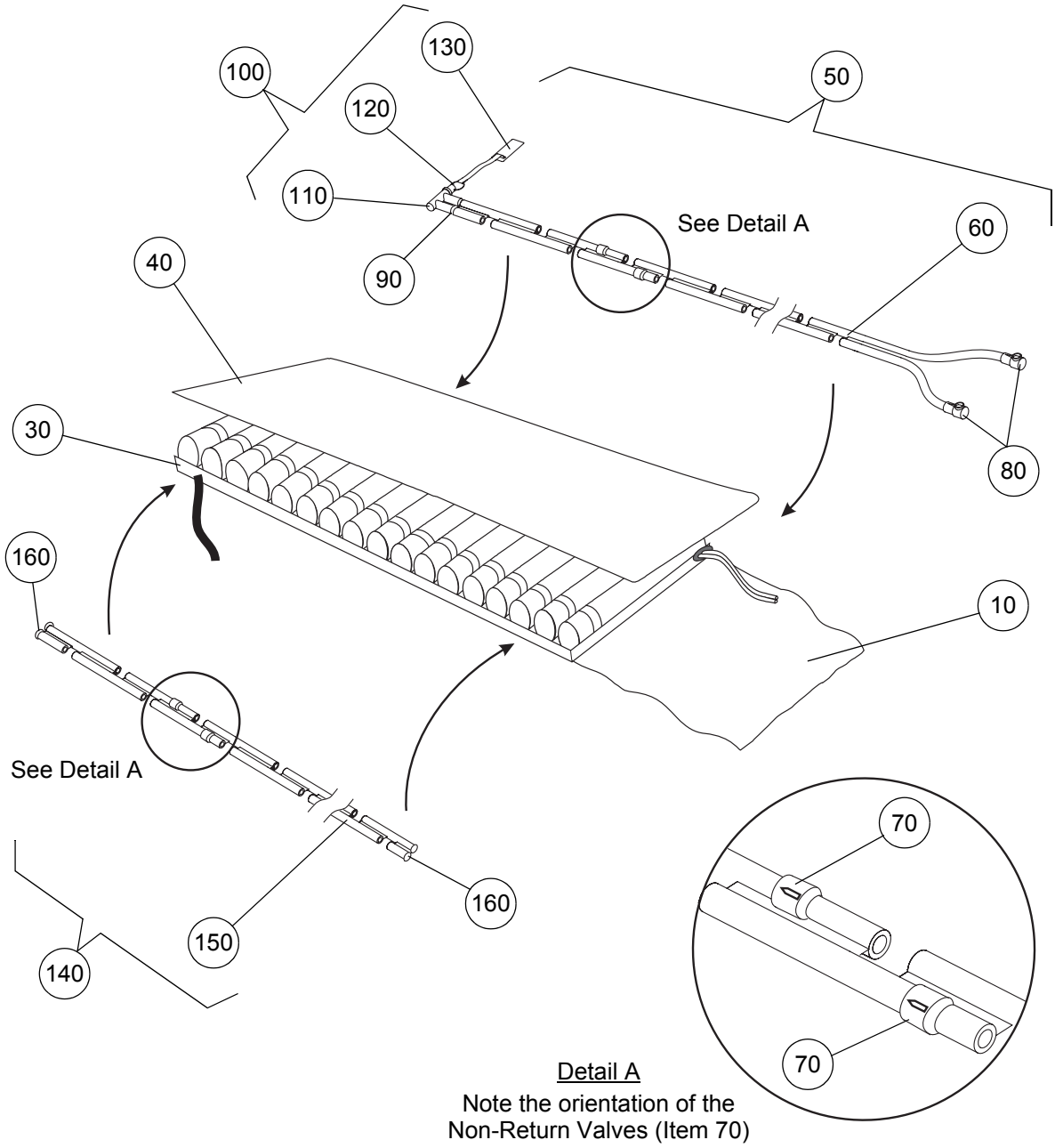


Figure 6 - Alpha Active Mattress Replacement (MR)



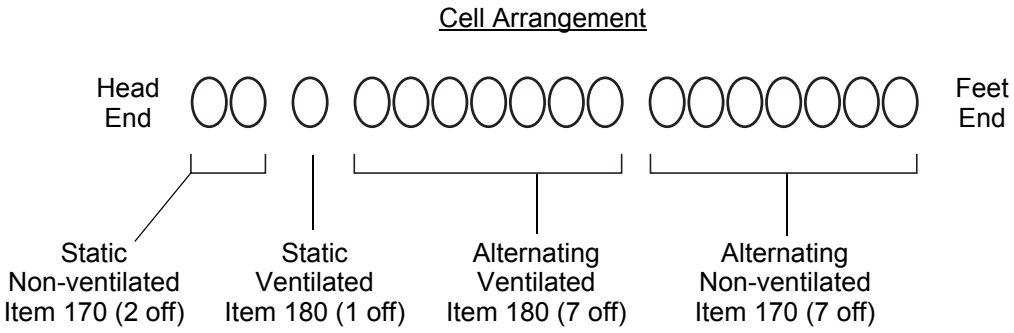


Figure 7 - Alpha Active Mattress Overlay (OL)

Table 4 - Alpha Active Mattress - Replacement (MR) and Overlay (OL) - Parts List

Item	Part Number	Description	Qty
REF	400001DAR	Alpha Active Mattress Replacement (Dartex Cover, USA)	-
-	400002DAR	Alpha Active Mattress Overlay (Dartex Cover, German)	-
-	400003ADV	Alpha Active Mattress Replacement (Advantex Cover, German)	-
-	400003DAR	Alpha Active Mattress Replacement (Dartex Cover, German)	-
10	400064	Base Cover Assy (for 400001DAR, 400003ADV & 400003DAR)	1
-	400061	Base Cover Assy (for 400002DAR)	1
20	402302	Foam Base (for 400001DAR, 400003ADV & 400003DAR only)	1
30	400050	Loop Base Sheet Assembly (for 400001DAR & 400002DAR)	1
-	400076	Loop Base Sheet Assembly (for 400003ADV & 400003DAR)	1
40	400062	Top Cover Assembly (for 400001DAR)	1
-	400077	Top Cover Assembly (for 400003ADV)	1
-	400058	Top Cover Assembly (for 400002DAR & 400003DAR)	1
50	400065	Manifold Assembly, Pump End (comprises Items 60 - 100)[(a)]	1
60	400065UF	Manifold Tube, Twin Bore	1
70	IC036	Non-Return Valve Assembly	4[(a)]
80	BP432	Connector, Female	2
90	197301	Connector, Straight Male/Male	2
100	IC067	End Plug Assembly (comprises Items 110 - 130)	1
110	IC033	End Plug, 2-way	1
120	FAS167	Clevis Pin, OD 3/16” x 5/8” Long	1
130	IC300	Swing Label and Web Assembly (CPR Pull)	1
140	400057	Manifold Assembly, Short (comprises Items 70, 150 - 160)[(a)]	1
150	400057UF	Manifold Tube, Twin Bore	1
160	BP418	Stopper	4
170	400053	Cell Assembly, Non-Ventilated	9
180	400055	Cell Assembly, Ventilated	8

a. There are two non-return valve assemblies (Item 70) in each manifold assembly (Items 50 and 140).

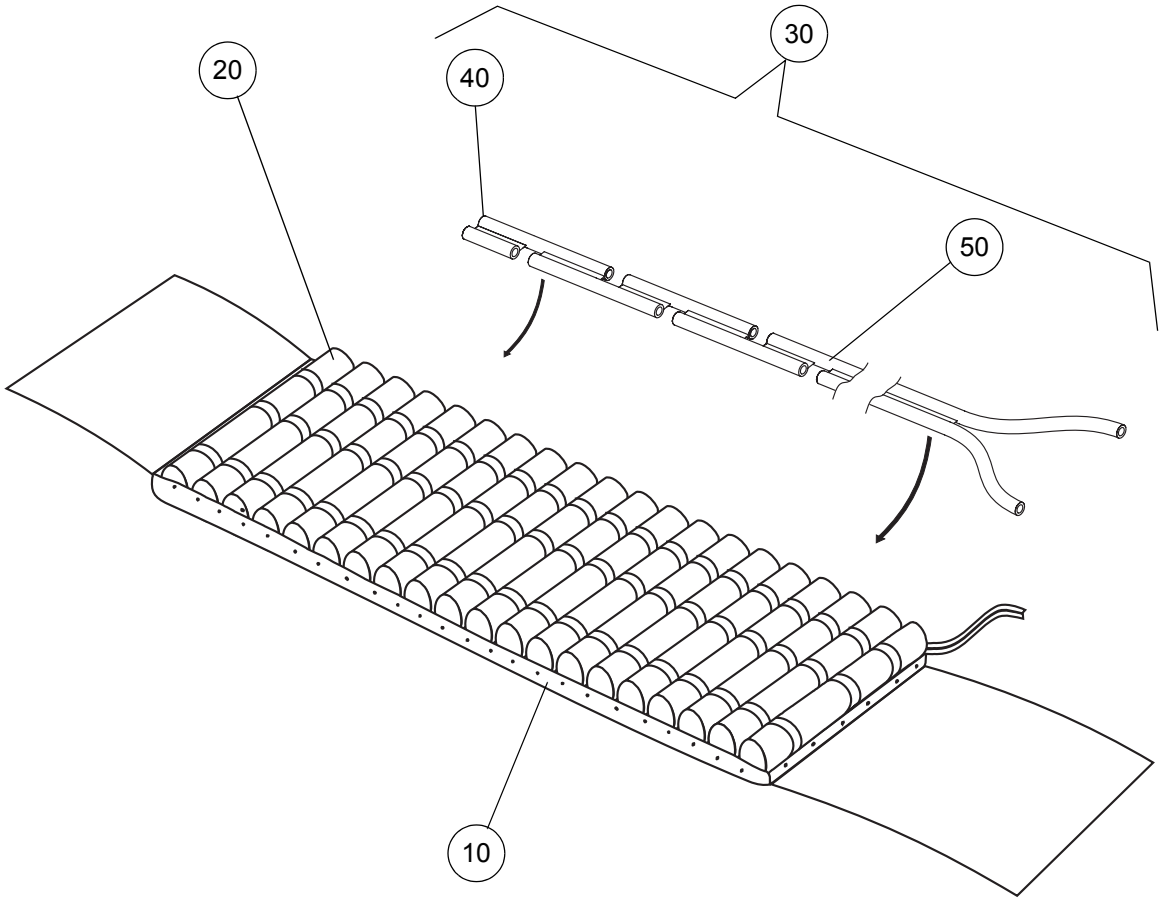


Figure 8 - ICT/6R Mattress Overlay (OL)

Table 5 - ICT/6R Mattress Overlay (OL) Parts List

Item	Part Number	Description	Qty
REF	IC001	ICT/6R Standard Mattress Overlay	-
10	IC061	Loop Base Sheet Assembly	1
20	IC095	Cell Assembly	20
30	SP042	Manifold Assembly (comprises Items 40 - 50)	1
40	BP418	Stopper	2
50	SP042UF	Manifold Tube, Twin Bore	1

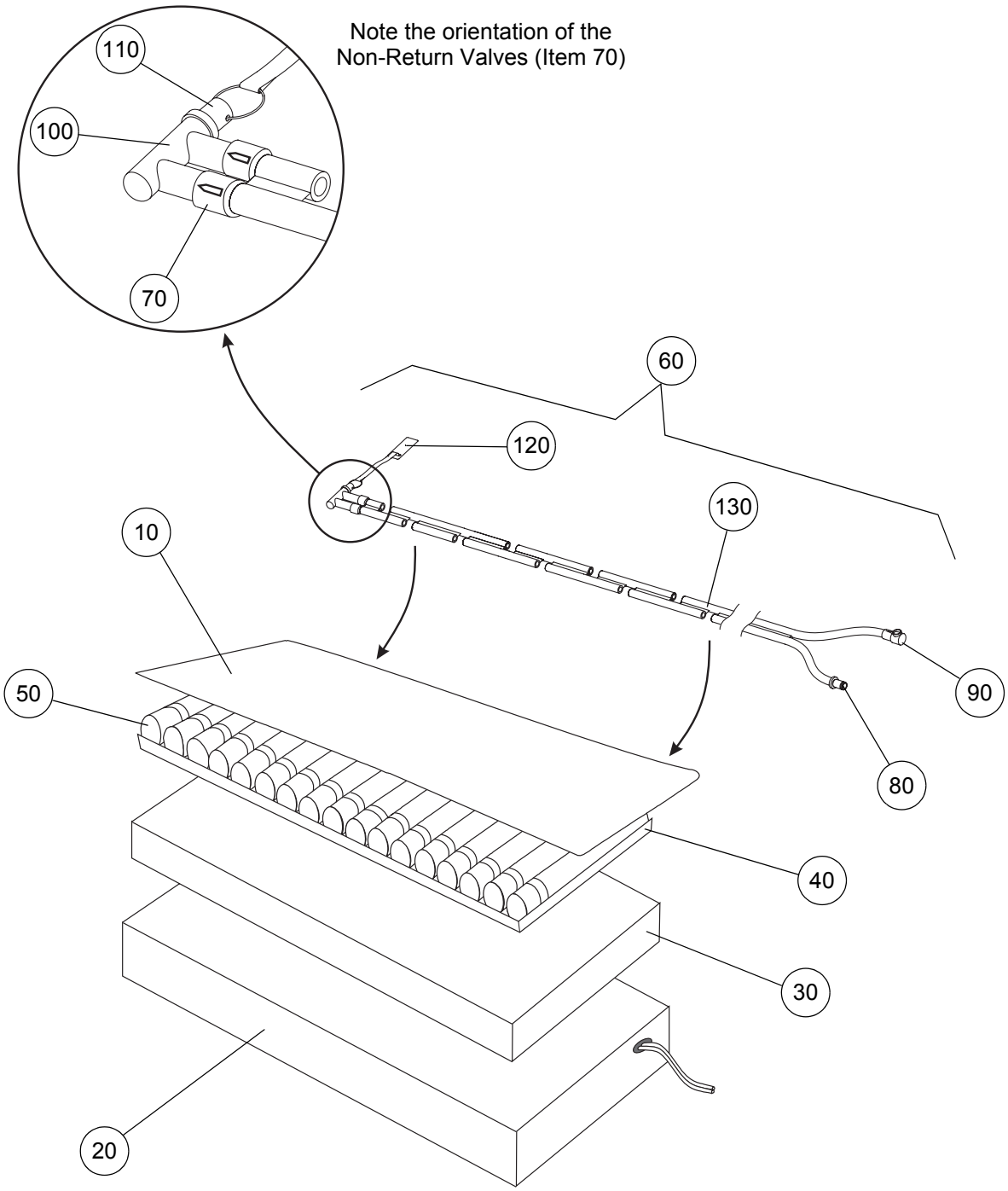
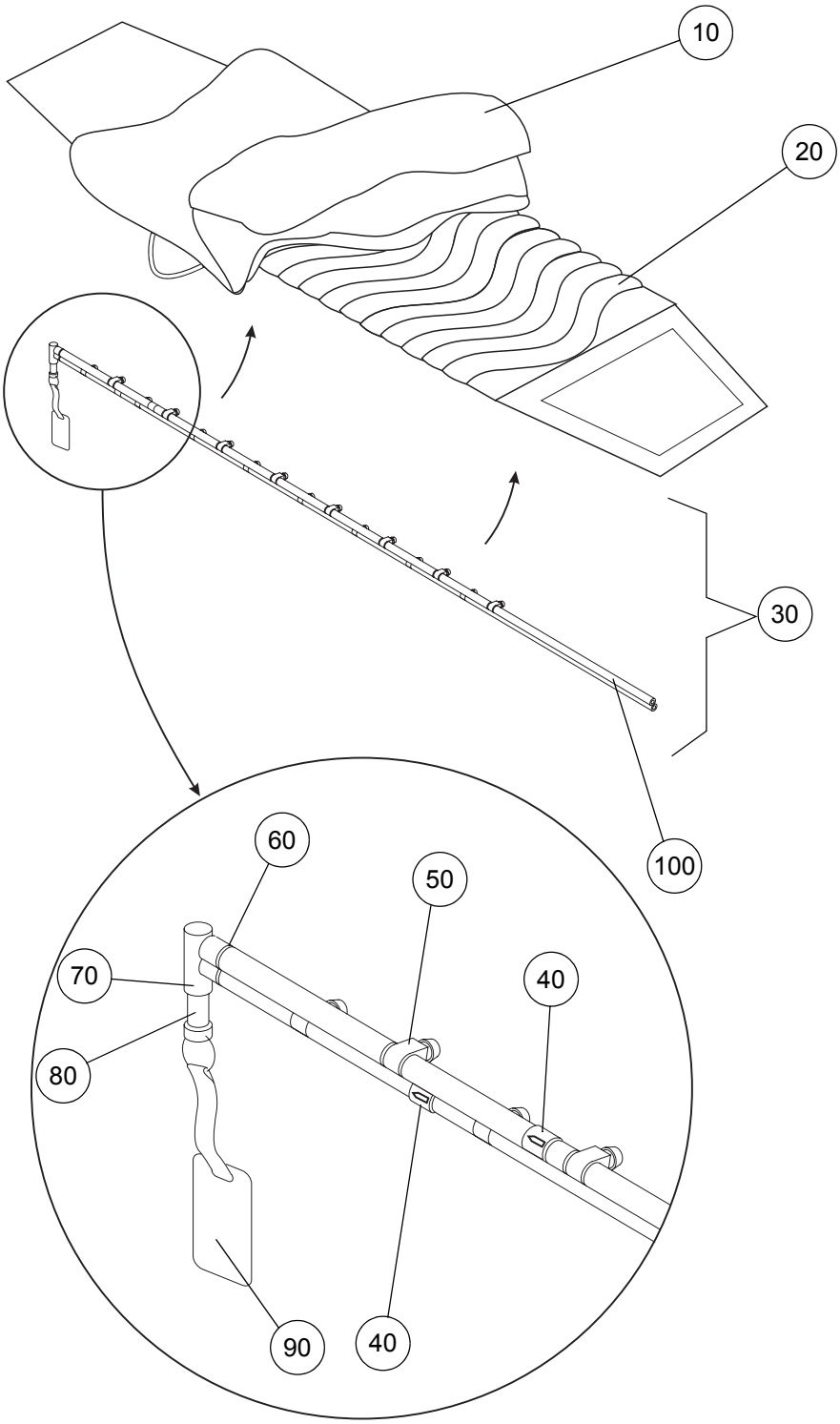


Figure 9 - Alpha Relief Mattress Replacement (MR)

Table 6 - Alpha Relief Mattress Replacement (MR) Parts List

Item	Part Number	Description	Qty
REF	402001DAR	Alpha Relief Mattress Replacement (Dartex Cover, UK)	-
-	402003HN	Alpha Relief Mattress Replacement (Hairnet Cover, USA)	-
10	402059	Top Cover Assembly (for 402001DAR)	1
-	402055	Hairnet Cover Assembly (for 402003HN)	1
20	400064	Base Cover Assembly (for 402001DAR)	1
30	402302	Foam Base	1
40	402053	Loop Base Sheet Assembly	1
50	402050	Cell Assembly	17
60	402051	Manifold Assembly (comprises Items 70 - 130)	1
70	IC036	Non-Return Valve Assembly	2
80	BP431	Connector, Male	1
90	BP432	Connector, Female	1
100	IC033	End Plug, 2-way	1
110	FAS167	Clevis Pin, OD 3/16” x 5/8” Long	1
120	401309	Swing Label and Web Assembly (CPR Pull)	1
130	402051UF	Manifold Tube, Twin Bore	1



Note the orientation of the Non-Return Valves (Item 40)

Figure 10 - Alpha Trancell II Mattress Overlay (OL)

Table 7 - Alpha Trancell II Mattress Overlay (OL) Parts List

Item	Part Number	Description	Qty
REF	401001	Alpha Trancell II Mattress Overlay (Standard)	-
-	401002	Alpha Trancell II Mattress Overlay (German)	-
-	401003	Alpha Trancell II Mattress Overlay (Ventilated)	-
-	401007	Alpha Trancell II Mattress Overlay (Without Cover)	-
10	401068	Top Cover Assembly (for 401001, 401002 & 401003)	1
20	401053	Mattress Overlay Assembly (for 401001, 401002 & 401007)	1
-	401069	Mattress Overlay Assembly, Ventilated (for 401003)	1
30	401065	Manifold Assembly (comprises Items 40 - 100)	1
40	IC036	Non-Return Valve Assembly	2
50	401300	T-Connector	16
60	197301	Connector, Straight Male/Male	2
70	IC033	End Plug, 2-way	1
80	FAS167	Clevis Pin, OD 3/16” x 5/8” Long	1
90	401309	Swing Label and Web Assembly (CPR Pull)	1
100	400065UF	Manifold Tube, Twin Bore	1

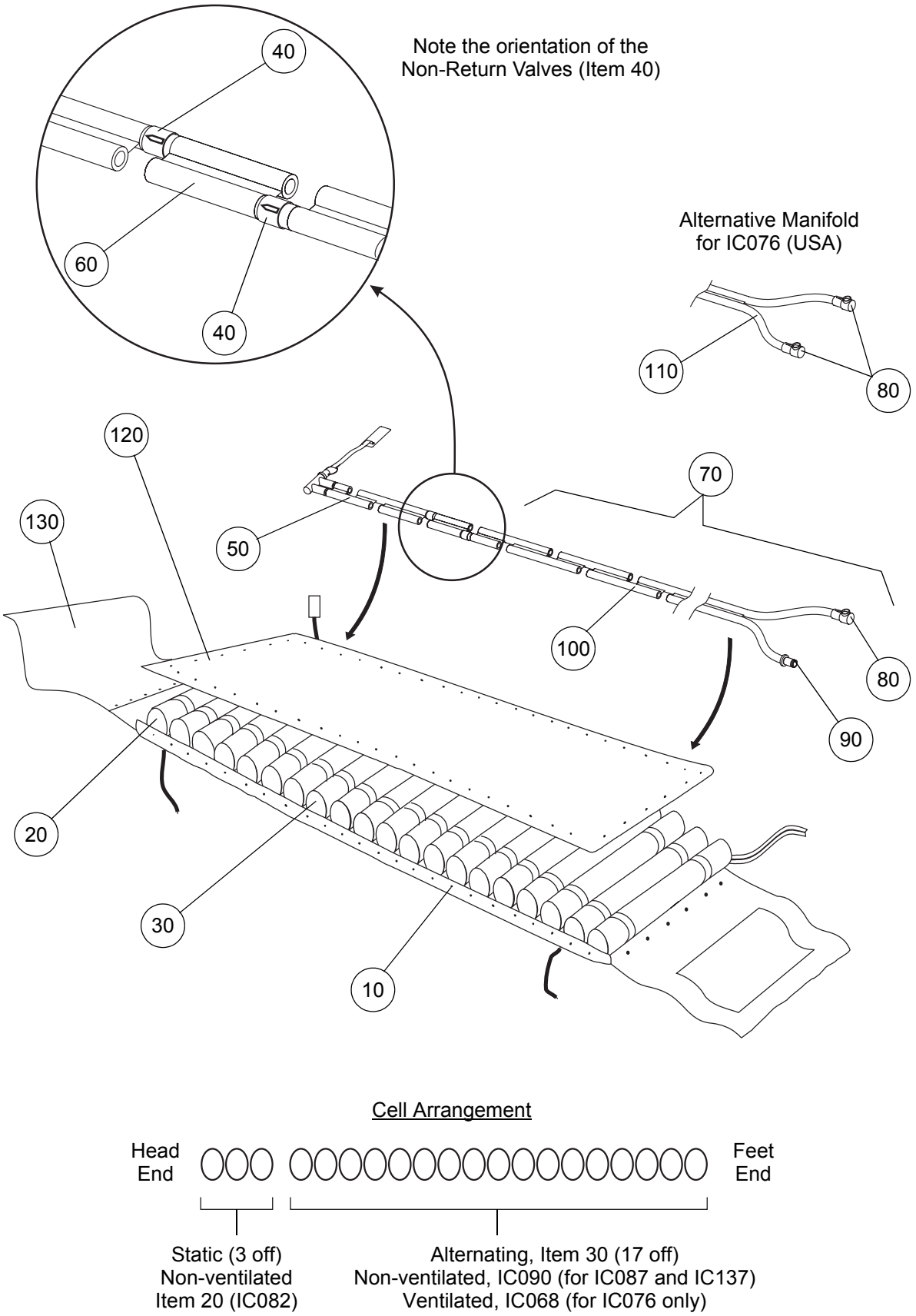
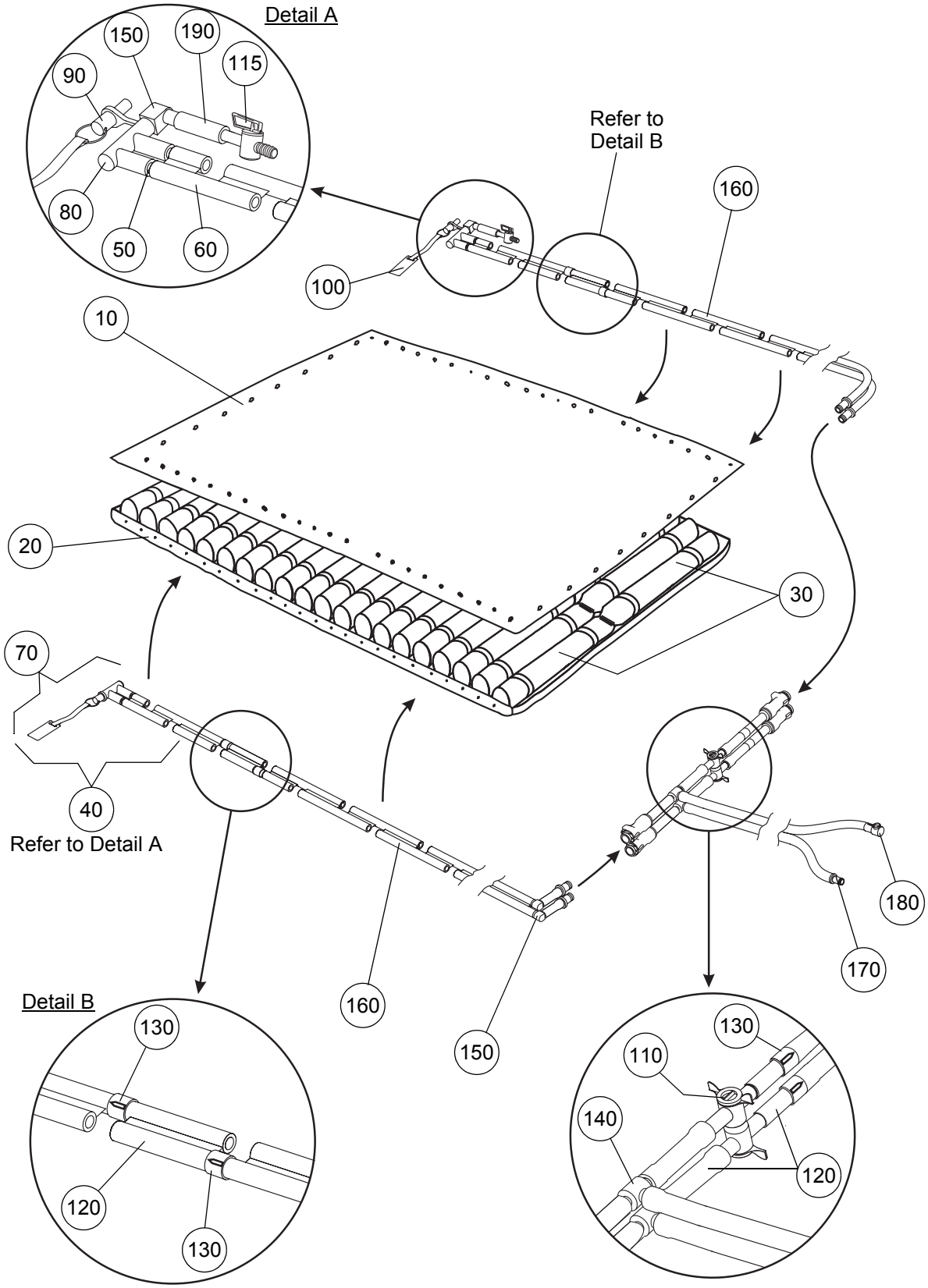


Figure 11 - AlphaXcell Mattress Overlay (OL)

Table 8 - AlphaXcell Mattress Overlay (OL) Parts List

Item	Part Number	Description	Qty
REF	IC087	AlphaXcell Mattress Overlay (Studded Cover, Euro)	-
-	IC137	AlphaXcell Mattress Overlay (Zipped Cover)	-
-	IC076	AlphaXcell Mattress Overlay (Studded Cover, USA)	-
10	IC088	Loop Base Sheet Assembly (for IC087 and IC137)	1
-	IC075	Loop Base Sheet Assembly (for IC076)	1
20	IC082	Head Cell Assembly	3
30	IC090	Body Cell Assembly (Non-Ventilated, for IC087 and IC137)	17
-	IC068	Body Cell Assembly (Ventilated, for IC076)	17
40	IC036	Non-Return Valve Assembly	2
50	IC017	Manifold Tube, Twin Bore (End Plug)	1
60	IC016	Manifold Tube, Twin Bore (Non-Return Valve Assemblies)	1
70	IC091	Manifold Tube Assembly (Pump End, for IC087 and IC137) (comprises Items 80, 90 and 100)[(a)]	1[(a)]
-	IC054	Manifold Tube Assembly (Pump End, for IC076) (comprises Items 80 and 110)[(a)]	1[(a)]
80	BP432	Connector, Female	1/2[(a)]
90	BP431	Connector, Male	1[(a)]
100	IC091UF	Manifold Tube, Twin Bore (for IC091)	1
110	IC054UF	Manifold Tube, Twin Bore (for IC054)	1
120	IC081	Top Cover Assembly (for IC087 and IC076)	1
-	IC133	Top Cover Assembly (for IC137)	1
130	IC129	Base Cover Assembly (for IC137 only)	1

a. Different connectors are fitted to the two Manifold Tube Assemblies (Item 70), as follows:
IC091 has 1 off BP432 (Item 80) and 1 off BP431 (Item 90).
IC054 has 2 off BP432 (Item 80) only.

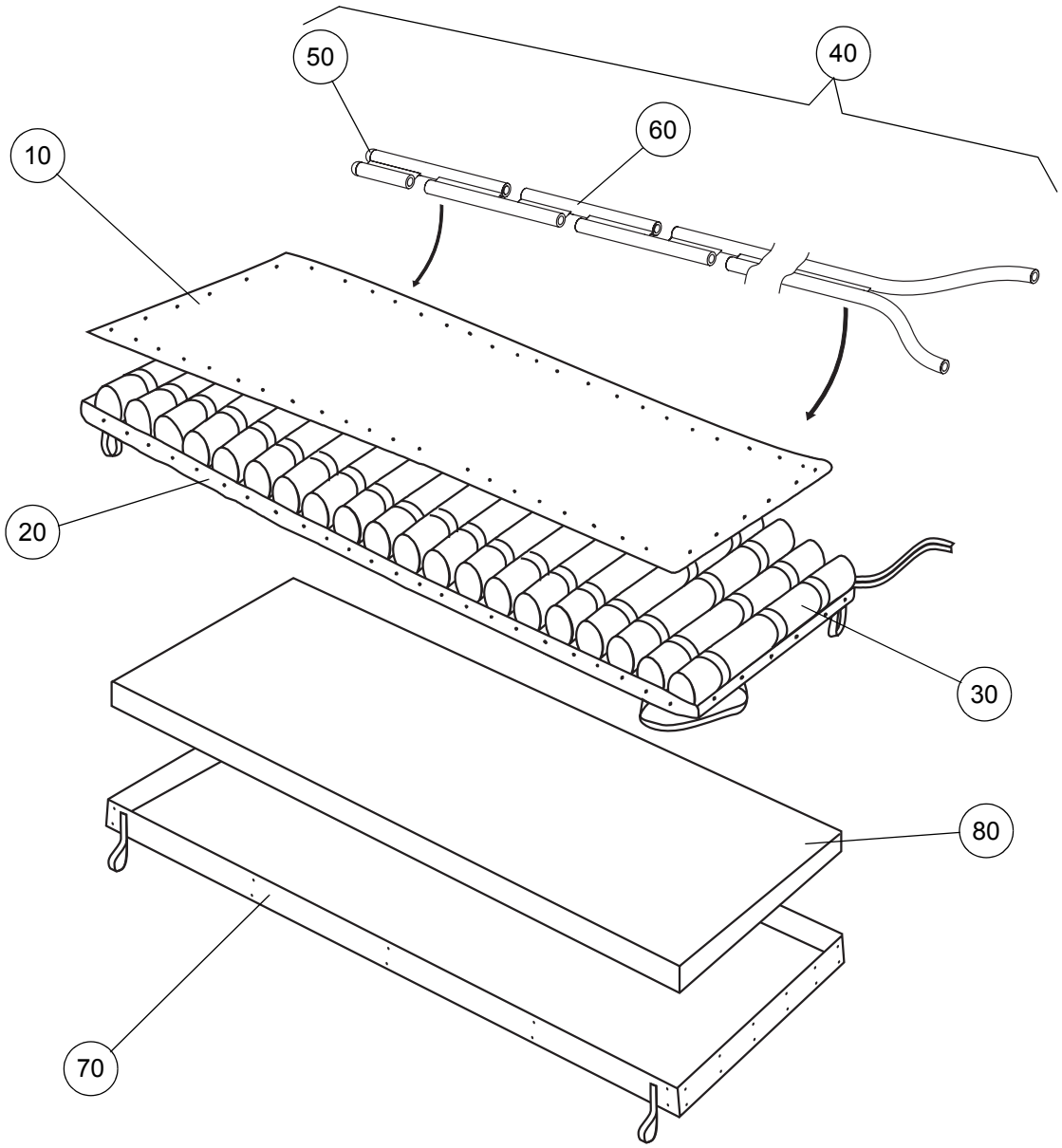


Note the orientation of the Non-Return Valves (Item 130)

Figure 12 - AlphaXcell Double Mattress Overlay (OL)

Table 9 - AlphaXcell Double Mattress Overlay (OL) Parts List

Item	Part Number	Description	Qty
REF	632001	AlphaXcell Double Mattress Overlay	1
10	6320052	Top Cover Assembly	1
20	632057	Loop Base Sheet Assembly	1
30	632050	Double Cell Assembly	20
40	632058	Manifold Tube End Assembly, CPR (comprises Items 50 - 70)	2
50	197301	Connector, Straight Male/Male	4
60	IC017UF	Manifold Tube, Twin Bore	2
70	IC128	End Plug Assembly (comprises Items 80 - 100)	2
80	IC033	End Plug, 2-way	2
90	FAS167	Clevis Pin, OD 3/16” x 5/8” Long	2
100	401309	Swing Label and Web Assembly (CPR Pull)	2
110	632302	Valve, 90° Turn	2
115	627415	Valve - Stopcock	1
120	IC016	Manifold Tube, Twin Bore (Short)	5
130	IC036	Non-Return Valve Assembly	6
140	401300	T-Connector	2
150	403305	Elbow Connector	3
160	IC091	Manifold Tube, Twin Bore (without connectors)	2
170	BP431	Connector, Male	5
180	BP432	Connector, Female	5
190	SW393	Tube, Blue ID6 OD10	1

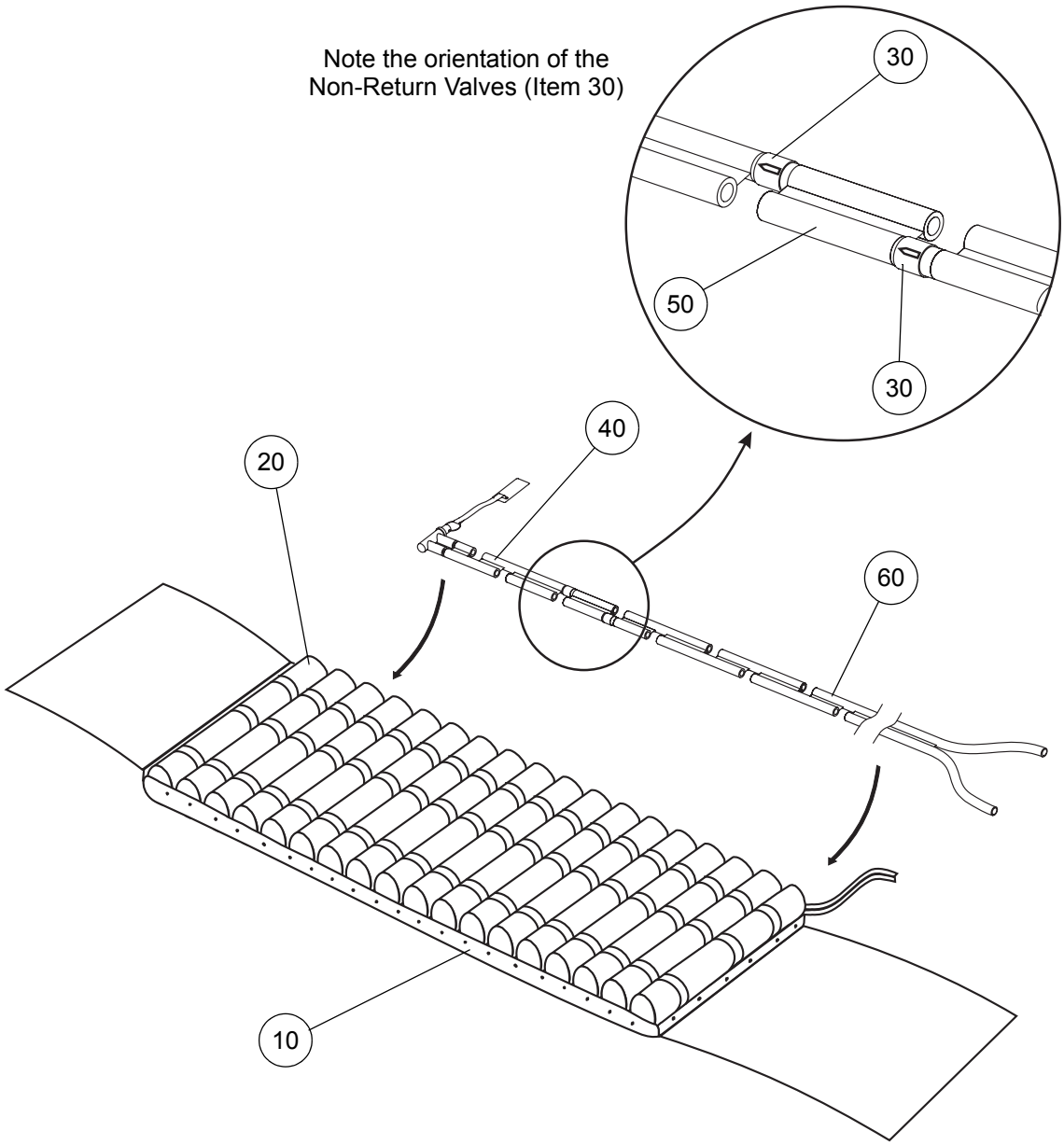


Note: Items 70 and 80 are only fitted on the Mattress Replacement

Figure 13 - Turbo-Puls Mattress Replacement (MR) and Overlay (OL)

Table 10 - Turbo-Puls Mattress Replacement (MR) and Overlay (OL) Parts List

Item	Part Number	Description	Qty
REF	BB27001	Turbo-Puls Mattress Overlay (Standard Cover)	-
-	BB27002	Turbo-Puls Mattress Replacement (Standard Cover)	-
-	BB27004	Turbo-Puls Mattress Overlay (Luxury Cover)	-
10	BB27055	Top Cover Assembly (Standard, for BB27001 and BB27002)	1
-	BB27064	Top Cover Assembly (Luxury, for BB27004)	1
20	BB27052	Loop Base Sheet Assembly	1
30	IC082	Cell Assembly	20
40	BB27054	Manifold Assembly (comprises Items 50 - 60)	1
50	BP418	Stopper	2
60	BB27054UF	Manifold Tube, Twin Bore	1
70	BB27061	Base Cover Assembly (for BB27002 only)	1
80	402302	Foam Base (for BB27002 only)	1



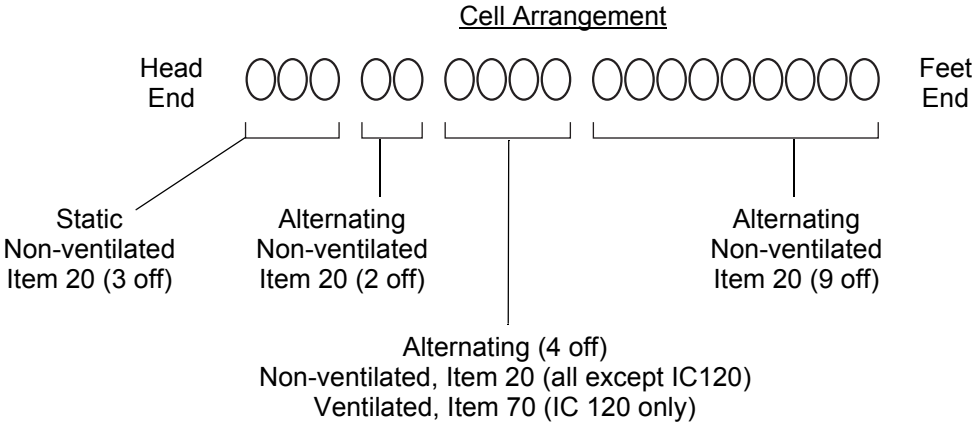


Figure 14 - ICT18 Mattress Overlay (OL)

Table 11 - ICT18 Mattress Overlay (OL) Parts List

Item	Part Number	Description	Qty
REF	IC044	ICT18 (Harada) Mattress Overlay	-
-	IC109	ICT18 (Sanse Do) Mattress Overlay	-
-	IC116	ICT18 (Taiwan) Mattress Overlay	-
-	IC120	ICT18 (Ventilated, Harada) Mattress Overlay	-
10	IC045	Loop Base Sheet Assembly (for IC044 and IC120))	1
-	IC113	Loop Base Sheet Assembly (for IC109)	1
-	IC117	Loop Base Sheet Assembly (for IC116)	1
20	IC058	Cell Assembly (for IC044 and IC120)[(a)]	18/14[(a)]
-	IC090	Cell Assembly (for IC109 and IC116)[(a)]	18[(a)]
30	IC036	Non-Return Valve Assembly	2
40	IC017	Manifold Tube, Twin Bore (End Plug)	1
50	IC016	Manifold Tube, Twin Bore (Non-Return Valve Assemblies)	1
60	IC050	Manifold Tube, Twin Bore (Pump End) (for IC044, IC109 & IC120)	1
-	IC121	Manifold Tube, Twin Bore (Pump End) (for IC116 only)	1
70	IC068	Cell Assembly, Ventilated (for IC120 only)[(a)]	4[(a)]
80	IC107	Top Cover Assembly (for IC116 only)	1

a. There are 18 off Cell Assemblies on the ICT18 Mattress Overlays, as follows:
IC044 has 18 off IC058 (Item 20).
IC109 and IC116 have 18 off IC090 (Item 20).
IC120 has 14 off IC058 (Item 20) and 4 off IC068 (Item 70).

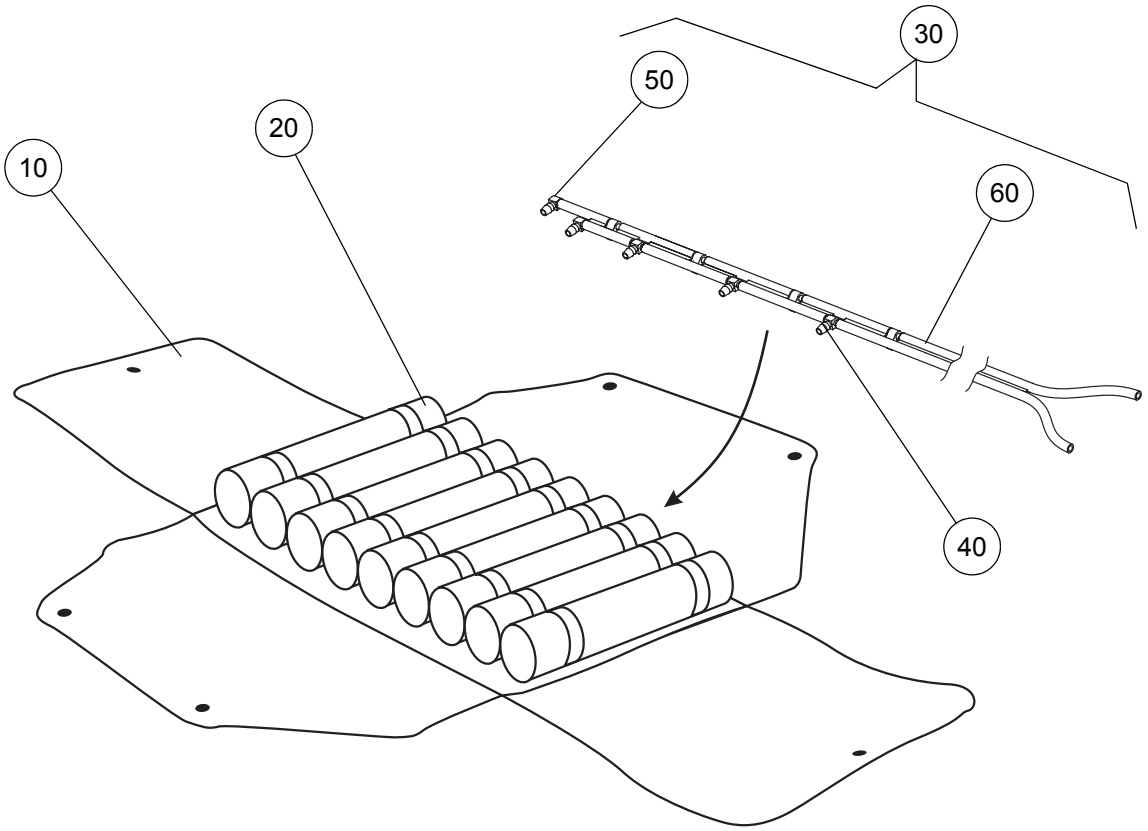


Figure 15 - Alpha Trancell Seat

Table 12 - Alpha Trancell Seat Parts List

Item	Part Number	Description	Qty
REF	IC004	Alpha Trancell Seat	-
10	SW314	Loop Base Sheet Assembly	1
20	SP034	Cell Assembly	9
30	SP044	Manifold Assembly (comprises Items 40 - 60)	1
40	SW050	T-Connector	7
50	SW052	Elbow Connector	2
60	SP044UF	Manifold Tube, Twin Bore	1

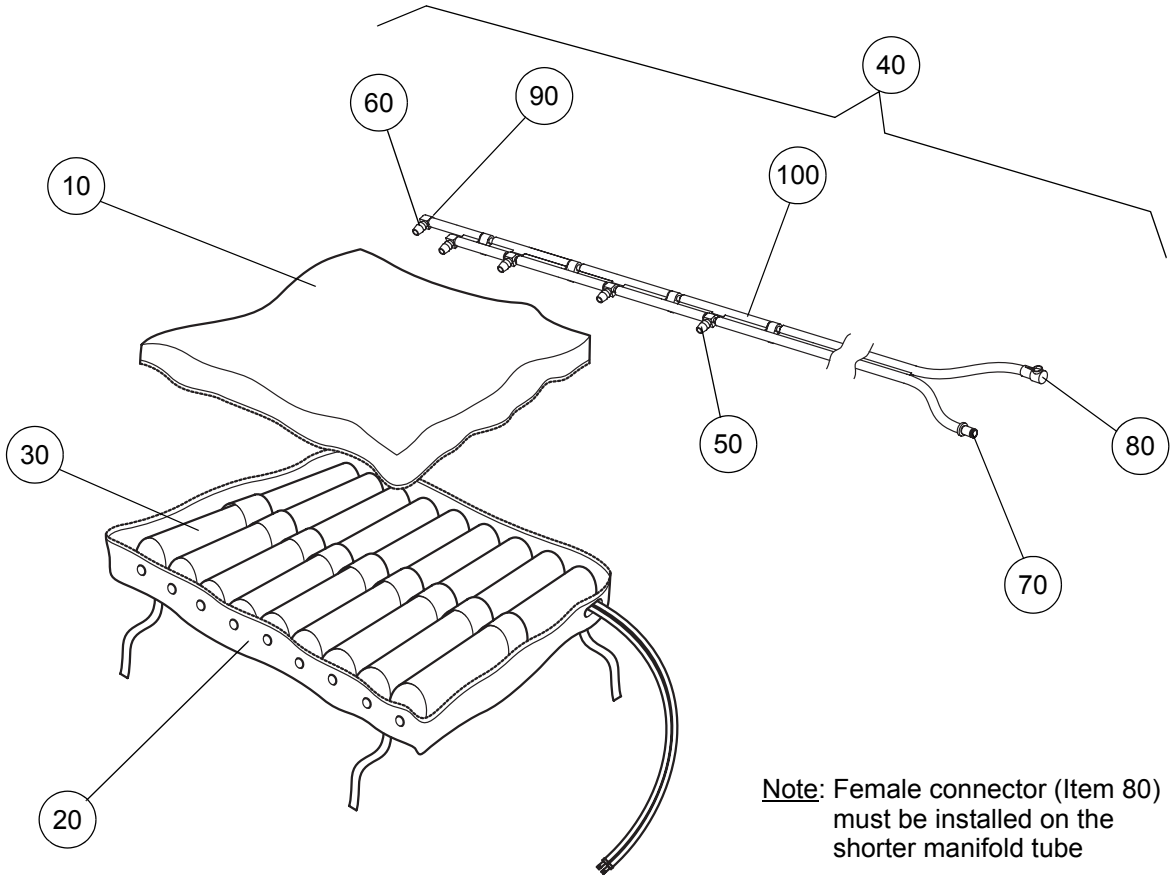


Figure 16 - Aura Seat

Table 13 - Aura Seat Parts List

Item	Part Number	Description	Qty
REF	403001	Aura Seat	-
10	403050	Top Cover Assembly	1
20	403051	Loop Base Sheet Assembly	1
30	403053	Cell Assembly	9
40	403052	Manifold Assembly (comprises Items 50 - 100)	1
50	401300	T-Connector	7
60	403305	Elbow Connector	2
70	BP431	Connector, Male	1
80	BP432	Connector, Female	1
90	403306	Restrictor	2
100	403052UF	Manifold Tube, Twin Bore	1

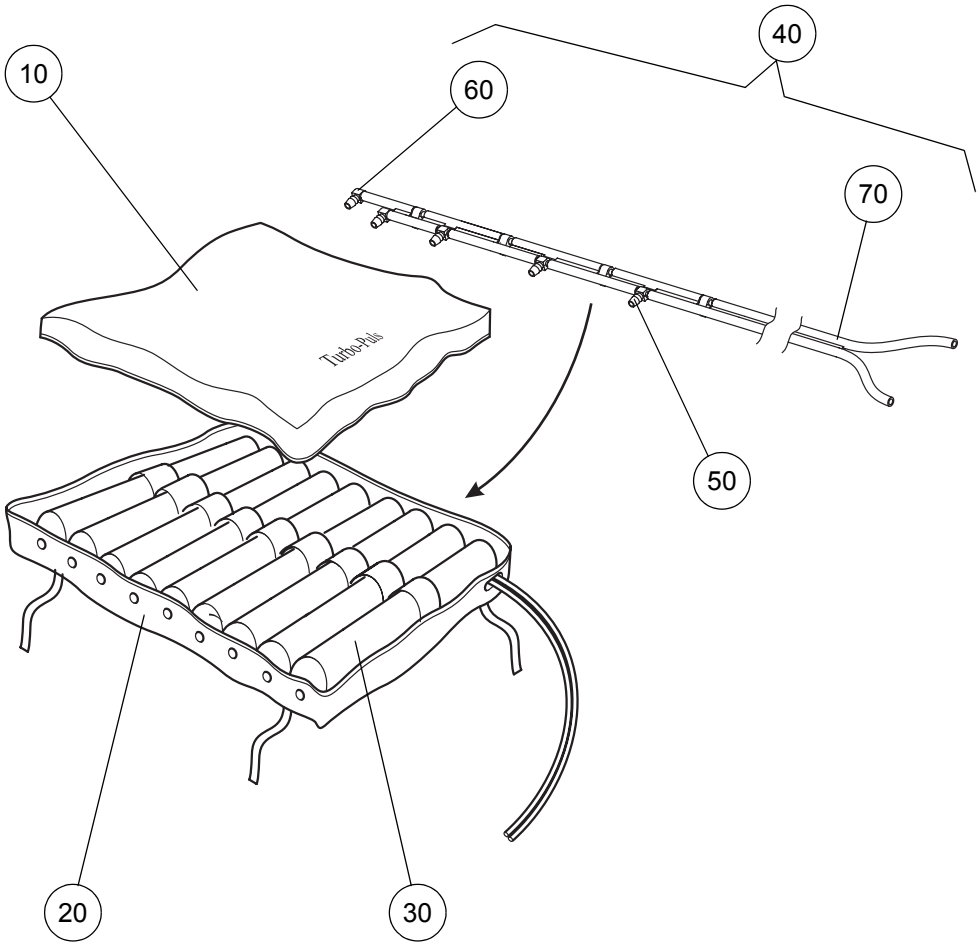


Figure 17 - Turbo-Puls Seat

Table 14 - Turbo-Puls Seat Parts List

Item	Part Number	Description	Qty
REF	BB27003	Turbo-Puls Seat	-
10	BB27050	Top Cover Assembly	1
20	BB27051	Loop Base Sheet Assembly	1
30	BB27053	Cell Assembly	9
40	SP044	Manifold Assembly (comprises Items 50 - 70)	1
50	SW050	T-Connector	7
60	SW052	Elbow Connector	2
70	SP044UF	Manifold Tube, Twin Bore	1

3 Removing the Top Cover

Refer to Figure 18 for a typical view of the top cover assembly and mattress system.

Zipped Top Cover

3.1 Pull away the velcro strips at the head and foot end of the mattress, and undo the zips along all four sides.

3.2 Remove the top cover from the mattress or seat.

Studded Top Cover

3.3 Pull apart the press studs on all four sides of the mattress or seat.

3.4 Remove the top cover from the mattress or seat.

Strapped Top Cover

3.5 Carry out either of the following procedures, depending on the strap configuration:

3.5.1 Top covers secured with straps and buckles which pass under the mattress:

3.5.1.1 Undo the strap buckles and remove the straps.

3.5.1.2 Remove the top cover from the mattress.

3.5.2 Top covers secured with elasticated corner straps.

3.5.2.3 Remove the elasticated loops from the corners of the mattress.

3.5.2.4 Remove the top cover from the mattress.

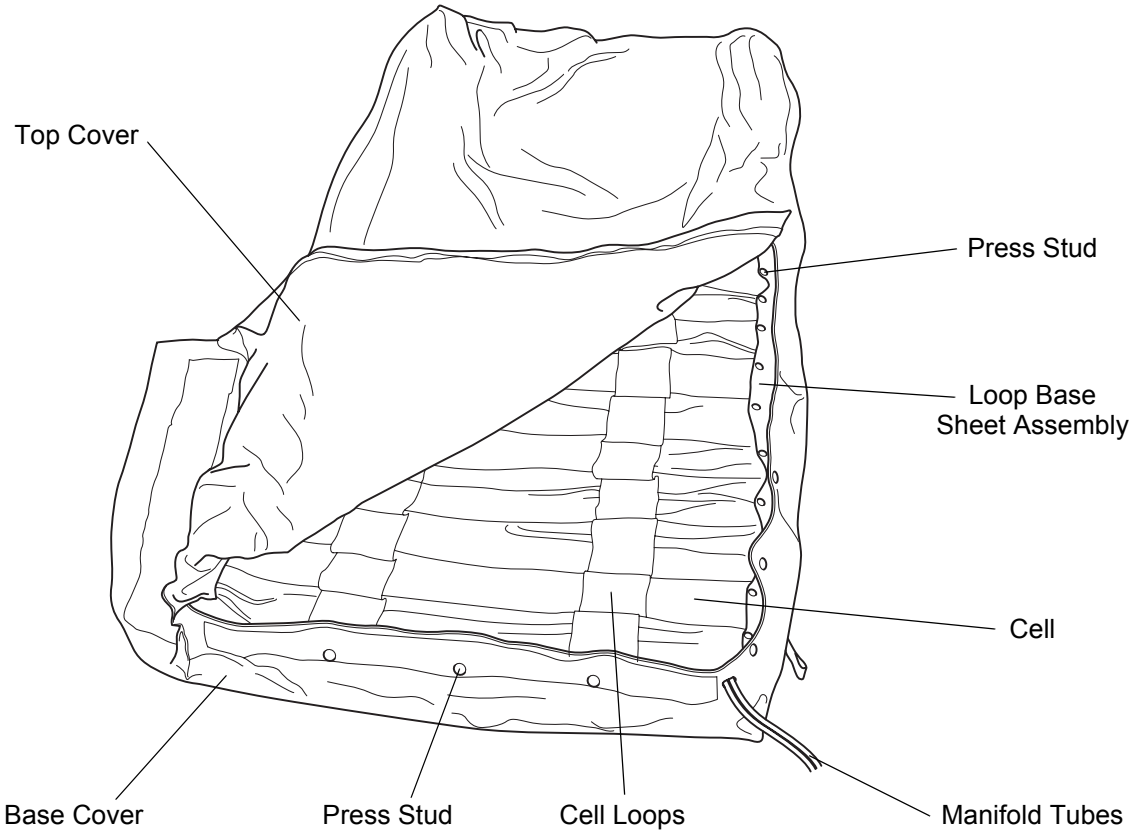


Figure 18 - Removing the Top Cover (typical view)

4 Installing the Top Cover

All Cover Types

4.1 Position the top cover over the mattress or seat.

Note: *Make sure that the cover is placed the correct way round, with the feet logo and/or Huntleigh logo facing up and situated at the feet end of the mattress or seat.*

4.2 If a CPR plug is fitted to the head end of the manifold assembly, feed the CPR swing label and web assembly out between the top cover and the mattress before securing the top cover,.

Note: *Make sure that CPR swing label and web assembly passes freely between the top cover and mattress or seat, and does not get trapped.*

Zipped Top Cover

4.3 Zip the sides of the top cover to the mattress or seat, and connect the velcro strips at the head and foot end of the mattress.

Studded Top Cover

4.4 Connect the press studs together on all four sides of the top cover.

Strapped Top Cover

4.5 Carry out either of the following procedures, depending on the strap configuration:

4.5.1 Top covers secured with straps and buckles which pass under the mattress:

4.5.1.1 Pass each strap underneath the mattress, and fasten to the strap buckle on the opposite side of the cover.

4.5.2 Top covers secured with elasticated corner straps.

4.5.2.2 Pass the elasticated loops over the corners of the mattress.

5 Replacing the Non-Return Valve Assemblies

Not all of the mattress replacements and overlays detailed in this service manual have non-return valve assemblies. Only those mattress replacements and overlays which have static head cells have non-return valve assemblies fitted in the manifold assembly. None of the seat systems have static cells or non-return valve assemblies. Refer to Chapter 1, Page 5, Table 2 for details of which mattresses have static head cells.

On those mattresses which do have non-return valve assemblies, they are installed near the head end of the mattress. There are two non-return valve assemblies, which are replaced as follows:

5.1 Remove the top cover (Refer to Page 21, Section 3).

5.2 On the last six cells at the head end of the mattress, pull apart the press studs that secure the end of the cell to the loop base sheet assembly. This will allow access to the non-return valve assemblies.

5.3 Move the cells away from the manifold assembly.

5.4 Remove the two ends of the non-return valve assembly from the manifold tubes.

5.5 Carefully insert the two ends of the new non-return valve assembly into the manifold tubes.

Note: *Make sure the arrow mark on the non-return valve body points towards the head end of the mattress (Refer to Figure 19). Mattress malfunction will occur if the non-return valve assemblies are fitted incorrectly.*

5.6 On the last six cells at the head end of the mattress, Connect the press studs together that secure the end of the cell to the loop base sheet assembly.

5.7 Install the top cover (Refer to Page 22, Section 4).

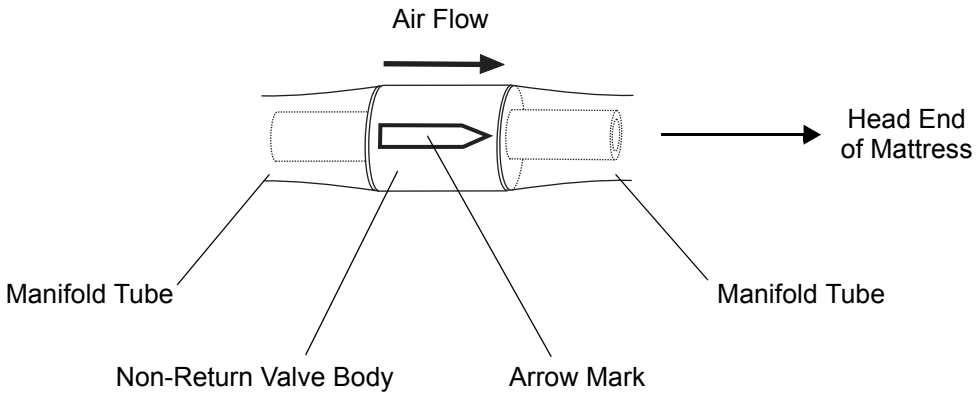


Figure 19 - Orientation of the Non-Return Valve Assembly

6 Removing a Cell

Refer to Figure 20 for a typical view of the connections between the cell assembly and the manifold assembly.

Note: *The cells in the Alpha Trancell II mattress overlay are not individual, replaceable cells, but are a one-piece manufactured item, and can only be replaced as a single, complete item (the mattress overlay assembly).*

All Mattress Replacement and Overlay Systems except Alpha Trancell II

6.1 Remove the top cover (Refer to Page 21, Section 3).

6.2 Pull apart the press studs that secure each end of the cell to the loop base sheet assembly.

6.3 Carefully remove the T-connector on the end of the cell from the manifold tubes.

Note: *The T-connector is part of the cell assembly.*

6.4 Pull the cell out through the loops in the loop base sheet assembly.

Alpha Trancell II Mattress Overlay only

6.5 To remove the mattress overlay assembly, Refer to Page 29, Section 11.

All Seat Systems

6.6 Remove the top cover (Refer to Page 21, Section 3).

6.7 Pull apart the press studs that secure each end of the cell to the loop base sheet assembly.

6.8 Carefully remove the T-connector (or elbow connector on the end cells) on the manifold from the side-entry grommet on the cell.

Note: *The T-connector and elbow connector are part of the manifold assembly.*

6.9 Pull the cell out through the loops in the loop base sheet assembly.

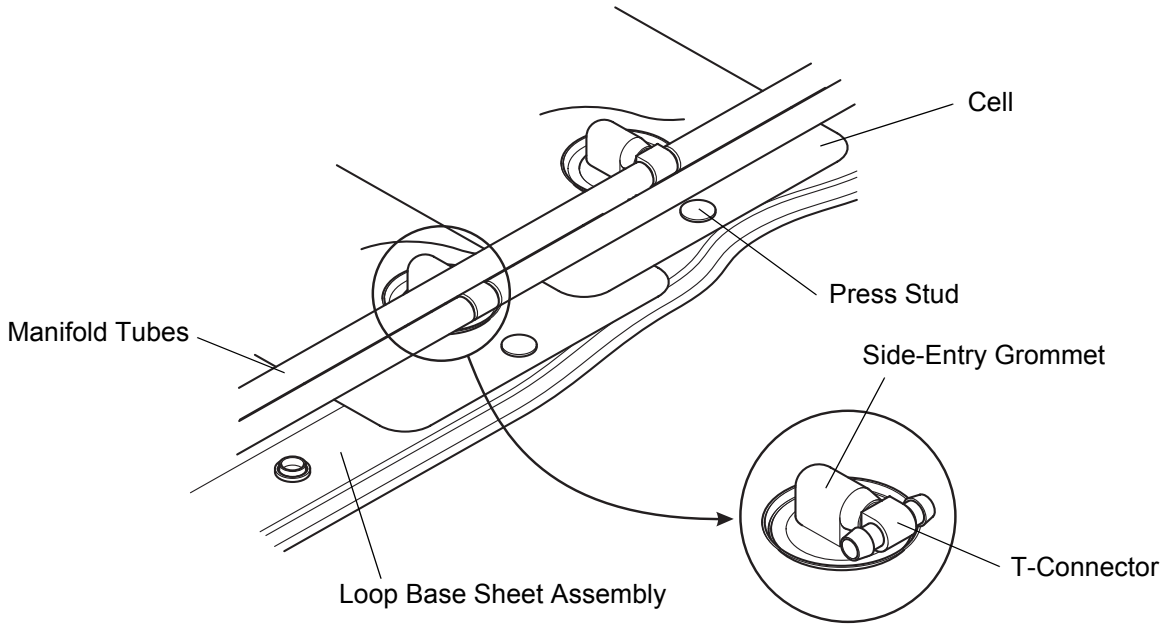


Figure 20 - Manifold - Cell Connections

7 Installing a Cell

Note: *There are several different cell assemblies in the various mattress replacements, overlays and seat systems detailed in this service manual. Make sure the cell assembly is the correct type for the particular mattress or seat, and also for the position within the mattress (where applicable).*

Note: *Make sure the orientation of the cell is correct (Refer to Figure 21). The seams should be facing the feet of the mattress.*

Note: *Installing the T or elbow connectors into the manifold tubes or side-entry grommets on the cells is made easier if the parts are wetted with methylated spirit immediately prior to insertion.*

All Mattress Replacement and Overlay Systems except Alpha Trancell II

7.1 Feed the cell through the loops in the loop base sheet assembly, with the cell T-connector adjacent to the manifold assembly.

7.2 Carefully insert the two ends of the T-connector into the manifold tubes.

7.3 Connect the press studs that secure each end of the cell to the loop base sheet assembly.

7.4 Install the top cover (Refer to Page 22, Section 4).

Alpha Trancell II Mattress Overlay only

7.5 To install the mattress overlay assembly, Refer to Page 29, Section 12.

All Seat Systems

7.6 Feed the cell through the loops in the loop base sheet assembly, with the side-entry grommet on the end of the cell adjacent to the T-connector on the manifold assembly.

7.7 Carefully insert the end of the T-connector (or elbow connector on the end cells) into the side-entry grommet on the cell.

7.8 Connect the press studs that secure each end of the cell to the loop base sheet assembly.

7.9 Install the top cover (Refer to Page 22, Section 4).

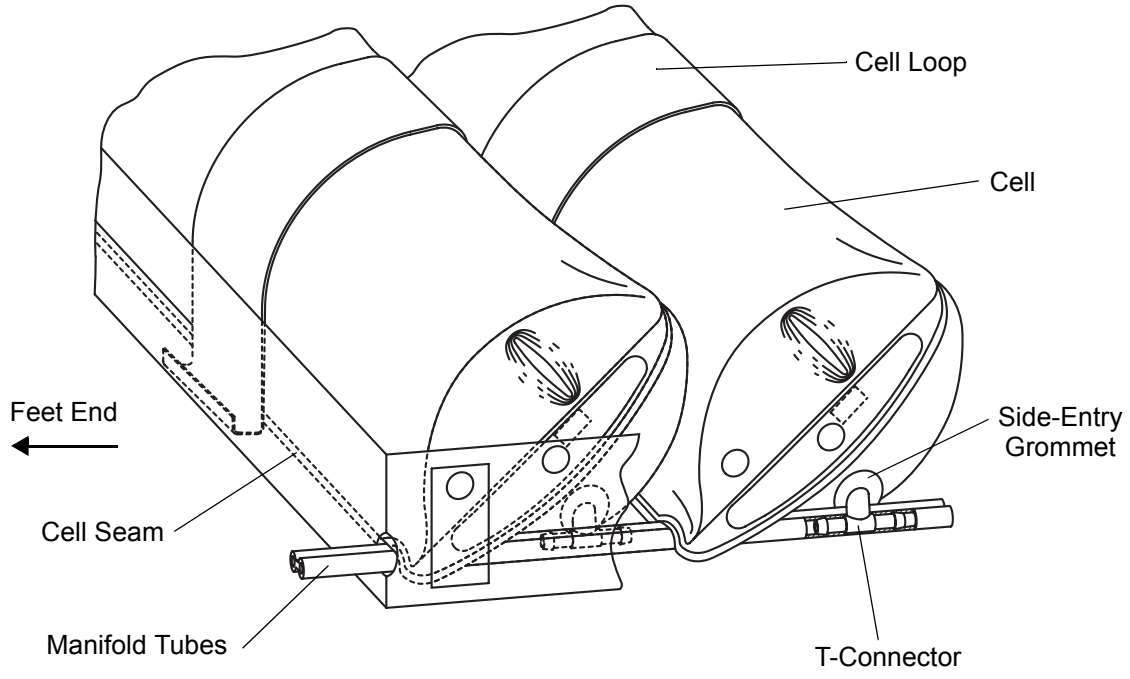


Figure 21 - Cell Orientation

8 Removing a Manifold Assembly

Refer to Figure 20 for a typical view of the connections between the cell assembly and the manifold assembly.

Note: *The cells in the Alpha Trancell II mattress overlay are not individual, replaceable cells, but are a one-piece manufactured item (the mattress overlay assembly).*

All Mattress Replacement and Overlay Systems except Alpha Trancell II

8.1 Remove the top cover (Refer to Page 21, Section 3).

8.2 Disconnect all the cells from the manifold assembly, as follows:

8.2.1 Pull apart the press studs that secure the end of the cell to the loop base sheet assembly on the manifold side only.

8.2.2 Carefully remove the T-connector on the end of the cell from the manifold tubes.

Note: *The T-connector is part of the cell assembly.*

8.3 On mattresses with a base cover assembly, pull the ends of the manifold tubes which connect to the pump into the mattress through the hole in the base cover assembly.

8.4 Lift the manifold assembly, complete with the CPR end plug assembly (where fitted), out of the mattress.

Alpha Trancell II Mattress Overlay

8.5 Remove the top cover (Refer to Page 21, Section 3).

8.6 Carefully remove the 16 T-connectors on the manifold assembly from the mattress overlay assembly (Refer to Figure 10).

Note: *The T-connectors are part of the manifold assembly.*

8.7 Remove the manifold assembly, complete with the CPR end plug assembly, from the mattress.

All Seat Systems

8.8 Remove the top cover (Refer to Page 21, Section 3).

8.9 Disconnect all the cells from the manifold assembly, as follows:

8.9.3 Pull apart the press studs that secure the end of the cell to the loop base sheet assembly on the manifold side only.

8.9.4 Carefully remove the T-connector (or elbow connector on some end cells) on the manifold from the side-entry grommet on the cell.

Note: *The T-connector and elbow connector are part of the manifold assembly.*

8.10 On some seat types, pull the ends of the manifold tubes which connect to the pump into the seat through the hole in the loop base sheet assembly.

8.11 Lift the manifold assembly out of the loop base sheet assembly.

9 Installing a Manifold Assembly

Note: *Installing the T or elbow connectors into the manifold tubes or side-entry grommets on the cells is made easier if the parts are wetted with methylated spirit immediately prior to insertion.*

All Mattress Replacement and Overlay Systems except Alpha Trancell II

9.1 Lay the manifold assembly onto the side of the mattress, with the tube connections to the pump at the feet end of the mattress and the CPR end plug assembly at the head end. Align the T-connectors on the cells with the cut-outs in the manifold tubes.

Note: *Refer to the relevant figure in this chapter to make sure the loop base sheet assembly and the cells and manifold assembly are in the correct positions.*

Note: *On some systems, there are no pump connectors, just open tubes, and/or stoppers replace the CPR end plug assembly, but the manifold orientation is the same.*

9.2 On mattresses with a base cover assembly, feed the “pump” ends of the manifold tubes out of the mattress through the hole in the base cover assembly.

9.3 Connect all the cells to the manifold assembly, as follows:

9.3.1 Carefully insert the two ends of the T-connector into the manifold tubes.

9.3.2 Connect the press studs that secure the end of the cell to the loop base sheet assembly on the manifold side.

9.4 Install the top cover (Refer to Page 22, Section 4).

Alpha Trancell II Mattress Overlay only

9.5 Lay the manifold assembly next to the mattress overlay assembly, with the CPR end plug assembly at the head end of the mattress. Align the T-connectors on the manifold assembly with the side-entry grommets on the mattress overlay assembly (Refer to Figure 10).

9.6 Carefully insert the 16 T-connectors on the manifold assembly into the side-entry grommets on the mattress overlay assembly.

9.7 Install the top cover (Refer to Page 22, Section 4).

All Seat Systems

9.8 Lay the manifold assembly onto the mattress or seat, with the tube connections to the pump at the feet end of the mattress and the CPR end plug assembly at the head end. Align the T or elbow connectors on the manifold tubes with the side-entry grommets on the cells.

Note: *On some systems, there are no pump connectors, just open tubes, and/or stoppers replace the CPR end plug assembly, but the manifold orientation is the same.*

9.9 On some seat types, feed the “pump” ends of the manifold tubes out of the seat through the hole in the loop base sheet assembly.

9.10 Connect all the cells to the manifold assembly, as follows:

9.10.3 Carefully insert the end of the T-connector into the side-entry grommet on the cell.

9.10.4 Connect the press studs that secure the end of the cell to the loop base sheet assembly on the manifold side.

9.11 Install the top cover (Refer to Page 22, Section 4).

10 Replacing the CPR/Rapid Deflate End Plug Assembly

Most, but not all, mattress replacement and overlay systems have a cardiopulmonary resuscitation (CPR) or Rapid Deflate plug to allow rapid deflation of the mattress replacement or overlay system. None of the seat systems have a CPR or Rapid Deflate plug.

The CPR (or Rapid Deflate) end plug assembly is located at the head end of the mattress replacement or overlay, on the same side as the manifold.

10.1 Remove the top cover (Refer to Page 21, Section 3).

10.2 At the head end of the mattress, on the manifold side, move the base cover assembly and loop base sheet assembly (including cells) out of the way to reveal the CPR end plug assembly.

10.3 Replace the following parts on the CPR end plug assembly as necessary (Refer to Figure 22):

- End plug, 2-way
- Clevis pin
- Swing label and web assembly
- Straight connector, male-male

Note: *Make sure that the CPR end plug assembly fits tightly into the manifold tubes and that the clevis pin is securely fitted before inflation, so that no air escapes.*

Note: *Installing the end plug or straight connectors is made easier if the parts are wetted with methylated spirit immediately prior to insertion.*

10.4 At the head end of the mattress, lay the base cover assembly and loop base sheet assembly (including cells) back in their correct positions.

10.5 Install the top cover (Refer to Page 22, Section 4).

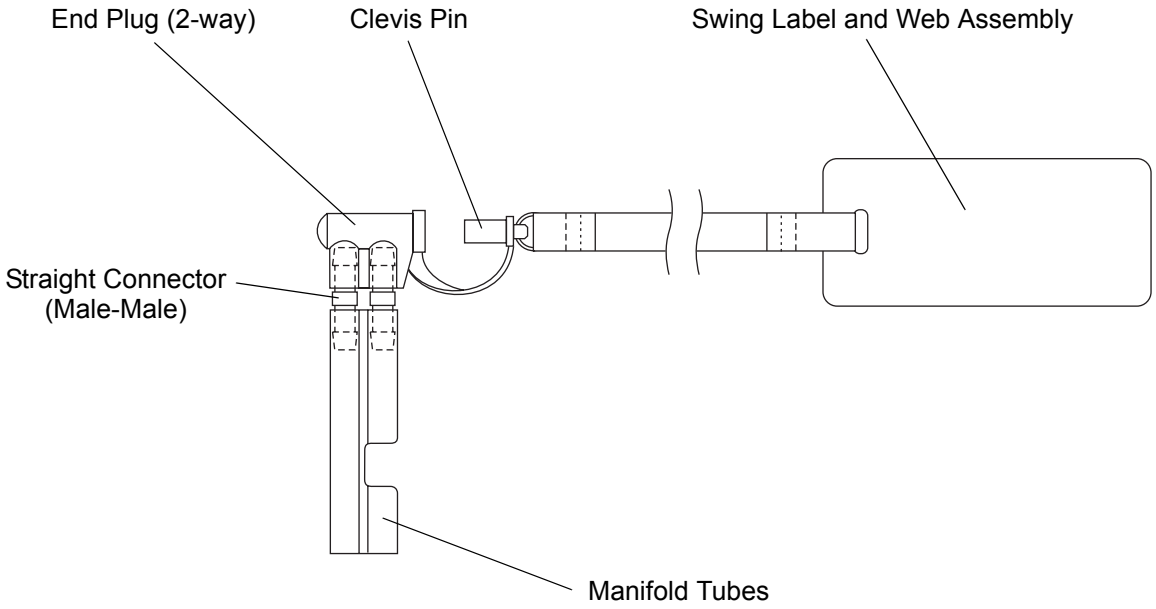


Figure 22 - CPR/Rapid Deflate End Plug Assembly

11 Removing the Loop Base Sheet Assembly

Note: *On the Alpha Trancell II mattress overlay there is no loop base sheet assembly or individual, replaceable cells. Instead, there is a one-piece manufactured item, the mattress overlay assembly, which can only be replaced as a single, complete item.*

All Mattresses (MR and OL) and Seat Systems, except Alpha Trancell II

11.1 Remove the top cover (Refer to Page 21, Section 3).

11.2 Remove the manifold assembly and all the cells from the loop base sheet assembly, as follows:

Note: *It is not necessary to remove the cells from the manifold assembly.*

11.2.1 Pull apart the press studs that secure each end of the cell to the loop base sheet assembly.

11.2.2 Pull the cell out through the loops in the loop base sheet assembly towards the manifold side of the mattress.

11.3 Move the cells and manifold assembly out of the way, and remove the loop base sheet assembly from the mattress or seat.

Alpha Trancell II Mattress Overlay only

11.4 Remove the top cover (Refer to Page 21, Section 3).

11.5 Carefully remove the 16 T-connectors on the manifold assembly from the mattress overlay assembly (Refer to Figure 10).

Note: *The T-connectors are part of the manifold assembly.*

11.6 Remove the mattress overlay assembly.

12 Installing the Loop Base Sheet Assembly

All Mattresses (MR and OL) and Seat Systems, except Alpha Trancell II

12.1 Lay the loop base sheet assembly onto the mattress or seat.

Note: *Refer to the relevant figure in this chapter to make sure the loop base sheet assembly and the cells and manifold assembly are in the correct positions.*

12.2 Install the manifold assembly and all of the cells onto the loop base sheet assembly, as follows:

12.2.1 Feed the cell through the loops in the loop base sheet assembly from the manifold side of the mattress.

12.2.2 Connect the press studs that secure the ends of the cell to the loop base sheet assembly.

12.3 Install the top cover (Refer to Page 22, Section 4).

Alpha Trancell II Mattress Overlay only

12.4 Lay the mattress overlay assembly next to the manifold assembly, with the CPR end plug assembly at the head end of the mattress. Align the T-connectors on the manifold assembly with the side-entry grommets on the mattress overlay assembly (Refer to Figure 10).

12.5 Carefully insert the 16 T-connectors on the manifold assembly into the side-entry grommets on the mattress overlay assembly.

Note: *Installing the T-connectors into the side-entry grommets is made easier if the parts are wetted with methylated spirit immediately prior to insertion.*

12.6 Install the top cover (Refer to Page 22, Section 4).

13 Removing the Foam Base

All mattress replacements have a foam base between the loop base sheet assembly and the base cover.

Alpha Active (MR) and Alpha Relief (MR)

13.1 Remove the top cover (Refer to Page 21, Section 3).

13.2 Pull the ends of the manifold tubes which connect to the pump into the mattress through the hole in the base cover assembly.

13.3 Lift the loop base sheet assembly, complete with foam block, cells, manifold assembly and CPR end plug assembly out of the mattress.

13.4 Pull out the flap of the foam base pocket at the end of the loop base sheet assembly, and slide out the foam block.

Turbo-Puls (MR)

13.5 Remove the top cover (Refer to Page 21, Section 3).

13.6 Pull the ends of the manifold tubes which connect to the pump into the mattress through the hole in the base cover assembly.

13.7 Lift the loop base sheet assembly, complete with cells, manifold assembly and CPR end plug assembly out of the mattress.

13.8 Remove the foam block from the base cover.

14 Installing the Foam Base

Alpha Active (MR) and Alpha Relief (MR)

14.1 Insert the foam block into foam block pocket at the end of the loop base sheet assembly.

14.2 Install the loop base sheet assembly, complete with foam block, cells, manifold assembly and CPR end plug assembly into the mattress.

14.3 Feed the “pump” ends of the manifold tubes out of the mattress through the hole in the base cover assembly.

14.4 Install the top cover (Refer to Page 22, Section 4).

Turbo-Puls (MR)

14.5 Insert the foam block into the base cover.

14.6 Install the loop base sheet assembly, complete with cells, manifold assembly and CPR end plug assembly into the mattress.

14.7 Feed the “pump” ends of the manifold tubes out of the mattress through the hole in the base cover assembly.

14.8 Install the top cover (Refer to Page 22, Section 4).

15 Replacing the Base Cover

All mattress replacements have a foam base between the loop base sheet assembly and the base cover.

15.1 Remove the top cover (Refer to Page 21, Section 3).

15.2 Pull the ends of the manifold tubes which connect to the pump into the mattress through the hole in the base cover assembly.

15.3 Lift the loop base sheet assembly, complete with cells, manifold assembly and CPR end plug assembly out of the mattress.

15.4 Replace the base cover.

15.5 Install the loop base sheet assembly, complete with cells, manifold assembly and CPR end plug assembly into the mattress.

15.6 Feed the “pump” ends of the manifold tubes out of the mattress through the hole in the base cover assembly.

15.7 Install the top cover (Refer to Page 22, Section 4).

16 Replacing the Pump Connectors on the end of the Manifold Tubes

Some of the mattress replacement, overlay and seat systems have connectors on the end of the manifold tubes which clip onto the pump connectors. The remaining systems have open manifold tubes which simply push onto the pump connectors.

All mattresses and seats with manifold connectors have one male and one female connector, except the Alpha Active mattresses (MR and OL) which both have two female connectors.

To replace the pump connectors on the end of the manifold tubes, carry out the following procedure:

16.1 Do not disassemble the mattress or seat.

16.2 Remove the connectors from the ends of the manifold tubes.

16.3 Install the new connectors onto the ends of the manifold tubes. Make sure the correct connectors are fitted to the manifold tubes.

Note: *On all mattresses and seats with one male and one female manifold connector, either connector type can be installed on either tube, except on the Aura Seat where the female connector **must** be installed on the shorter of the two manifold tubes.*

17 Replacing the Turn Valves on the AlphaXcell Double Mattress Overlay

The AlphaXcell Double Mattress is a double inflatable mattress overlay, which provides static pressure to one side and alternating pressure relief to the other side. The static and alternating sides of the mattress can be set up on either side of the bed depending on customer requirements.

There are three 90° turn valves on the AlphaXcell double mattress overlay:

- Two valves at the feet end of the mattress retain the air in the static side of the mattress.
- One valve at the head end of the mattress is used to release air from the static side of the mattress until the desired comfort is achieved.

To replace the turn valves, carry out the following procedure (Refer to Figure 12):

17.1 Remove the top cover (Refer to Page 21, Section 3).

17.2 To replace the two valves at the feet end of the mattress:

17.2.1 At the feet end of the mattress, move the base cover assembly and loop base sheet assembly (including cells) out of the way to reveal the two turn valves in the section of manifold between the sides of the mattress.

17.2.2 Remove the two ends of the turn valve from the manifold tubes.

17.2.3 Carefully insert the two ends of the new turn valve into the manifold tubes.

17.2.4 At the feet end of the mattress, lay the base cover assembly and loop base sheet assembly (including cells) back in their correct positions.

17.3 To replace the valve at the head end of the mattress:

17.3.5 At the head end of the mattress, on the manifold side, move the base cover assembly and loop base sheet assembly (including cells) out of the way to reveal the turn valve by the CPR end plug assembly.

17.3.6 Remove the end of the turn valve from the tube.

17.3.7 Carefully insert the end of the new turn valve into the tube.

17.3.8 At the head end of the mattress, lay the base cover assembly and loop base sheet assembly (including cells) back in their correct positions.

17.4 Install the top cover (Refer to Page 22, Section 4).

18 Press Stud Replacement

Depending on the particular mattress or seat system being repaired, the press stud parts fitted to it are either plastic or metal. Make sure that the new press stud parts are of the same material as the old press stud parts being removed (Refer to Table 15).

Note: *Do not mix metal and plastic press stud parts on the same mattress or seat system.*

18.1 Make sure that the two halves of the die set (Fig 23, Item 20) are installed in the jaws of the hand press tool (Fig 23, Item 10).

18.2 Remove the old press stud parts from the mattress, if necessary using side-cutters, taking care not to damage the mattress fabric.

18.3 Place the new stud post (Table 15, Item 30) in the location hole in the assembly where it is to be fitted.

Note: *Check with similar studs for the correct position.*

18.4 Position the stud post and assembly in the hand press tool.

18.5 Depending on which is to be fitted, fit a stud cap (Table 15, Item 40) or stud socket (Table 15, Item 50) onto the stud post, and firmly squeeze the handles of the hand press tool together.

18.6 Remove the secured press stud assembly from the hand press tool.

Note: *Make sure that the stud assembly (comprising a stud post and stud cap or socket) is installed correctly. The stud assembly should grip the material and not rotate freely.*

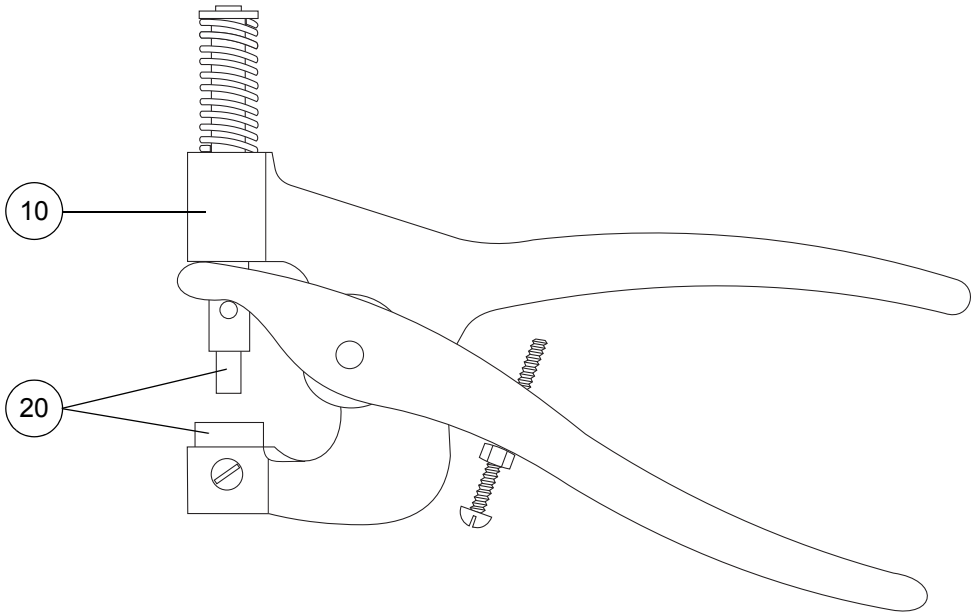


Figure 23 - Press Stud Tool

Table 15 - Press Stud Parts List

Item	Part Number	Description	Qty
10	MIS143	Hand Press Tool	1
20	MIS142	Die Set (for Hand Press Tool - Item 10)	1
30	FAS169	Stud Post, Schaeffer Plastic	A/R
40	FAS170	Stud Cap, Schaeffer Plastic	A/R
50	FAS171	Stud Socket, Schaeffer Plastic	A/R
60	FAS152	Snap Fastener Cap, Metal	A/R
70	FAS153	Snap Fastener Socket, Metal	A/R
80	FAS154	Snap Fastener Post, Metal	A/R
90	FAS155	Snap Fastener Stud, Metal	A/R

CHAPTER 4

TROUBLESHOOTING

1 Troubleshooting Table

Table 16 contains fault symptoms, their possible causes and suggests steps to rectify the problem. Where possible, reference is made to the relevant repair chapter and section.

Table 16 - Troubleshooting Table

Fault	Possible Cause		Remedy
Not Inflating	**Mattress**	CPR (or Rapid Deflate) stopper not inserted.	Check and replace. Chapter 3, Page 28, Section 10
		Leakages.	• Cells - check welded seams & grommets. Replace cell(s). Chapter 3, Page 24, Section 6 Chapter 3, Page 25, Section 7 • Manifold - rectify or replace. Chapter 3, Page 26, Section 8 Chapter 3, Page 27, Section 9
		Manifold tubes kinked or blocked.	Clear blockage or replace. Chapter 3, Page 26, Section 8 Chapter 3, Page 27, Section 9
Static Head Cells Alternate	**Mattress**	Non-return valves installed incorrectly.	Check orientation and rectify. Chapter 3, Page 23, Section 5
(where applicable)		Non-return valves faulty.	Replace. Chapter 3, Page 23, Section 5

CHAPTER 5

TESTING

1 Pressure and Function Test

This procedure must be carried out after a service or major repair of a mattress or seat system.

The test equipment in Table 17 is required.

Table 17 - Pressure and Function Test Equipment

Item	Test Equipment
1	Pressure / Flow Meter
2	Portable Inflation Test Unit
3	Stopwatch

Test Procedure

1.1 Connect a portable inflation test unit to the mattress or seat.

1.2 Fully inflate the mattress or seat, and connect it to a pressure/flow meter.

1.3 Test to the following requirements:

1.3.1 Inflation test pressure:

1.3.1.1 All mattress replacements and overlays - 62 to 70 mmHg.

1.3.1.2 All seat systems - 50 to 60 mmHg.

1.3.2 Inflation stabilization period 30 seconds

1.3.3 Inflation test period 3 minutes

1.3.4 Leak rate must not exceed 3 mmHg

Note: *If the mattress or seat fails the tests, investigate as to the reason why, repair any faults and re-test in accordance with the test specification.*

CHAPTER 6
TECHNICAL SPECIFICATION

Table 18 - Mattress Replacement, Overlay and Seat System Dimensions

Product	Mattress Type[a]	Length[b]	Width[b]	Inflated Height[b]
Alpha Active	MR	2090 (82.2)	866 (34.1)	206 (8.1)
Alpha Active (German)	OL	2090 (82.2)	866 (34.1)	206 (8.1)
Alpha Relief	MR	2090 (82.2)	860 (33.9)	191 (7.5)
Alpha Trancell II	OL	2006 (79.0)	840 (33.1)	90 (3.5)
Alpha Trancell II (Ventilated)	OL	2006 (79.0)	840 (33.1)	90 (3.5)
Alpha Trancell II (Without Cover)	OL	2006 (79.0)	840 (33.1)	90 (3.5)
Alpha Trancell (ICC13)	Seat	459 (18.1)	457 (18.0)	50 (2.0)
AlphaXcell (Studded/Zipped Cover)	OL	2040 (80.3)	860 (33.9)	114 (4.5)
AlphaXcell Double Mattress	OL	2040 (80.3)	1350 (53.1)	114 (4.5)
Aura	Seat	470 (18.5)	455 (17.9)	50(2.0)
Turbo-Puls	OL	2040 (80.3)	860 (33.9)	114 (4.5)
Turbo-Puls	MR	2040 (80.3)	860 (33.9)	172 (6.8)

a. Mattress Type: MR = Mattress Replacement, OL = Mattress Overlay

b. Dimensions are given in metric (mm) with imperial in parentheses (inches).

CHAPTER 7
PARTS LIST

1 Alpha Active Mattress Replacement and Overlay

Part Number	Description	Fig - Item	Qty
400001DAR	Alpha Active Mattress Replacement (Dartex Cover, USA)	-	-
400002DAR	Alpha Active Mattress Overlay (Dartex Cover, German)	-	-
400003ADV	Alpha Active Mattress Replacement (Advantex Cover, German)	-	-
400003DAR	Alpha Active Mattress Replacement (Dartex Cover, German)	-	-
400064	Base Cover Assy (for 400001DAR, 400003ADV & DAR)	6-10	1
400061	Base Cover Assy (for 400002DAR)	7-10	1
402302	Foam Base (for 400001DAR, 400003ADV & 400003DAR only)	6-20	1
400050	Loop Base Sheet Assembly (for 400001DAR & 400002DAR)	6-30 7-30	1
400076	Loop Base Sheet Assembly (for 400003ADV & 400003DAR)	6-30	1
400062	Top Cover Assembly (for 400001DAR)	6-40	1
400077	Top Cover Assembly (for 400003ADV)	6-40	1
400058	Top Cover Assembly (for 400002DAR & 400003DAR)	6-40 7-40	1
400065	Manifold Assembly, Pump End	6-50 7-50	1
400065UF	• Manifold Tube, Twin Bore	6-60 7-60	1
IC036	• Non-Return Valve Assembly	6-70 7-70	2
BP432	• Connector, Female	6-80 7-80	2
197301	• Connector, Straight Male/Male	6-90 7-90	2
IC067	• End Plug Assembly	6-100 7-100	1
IC033	• • End Plug, 2-way	6-110 7-110	1
FAS167	• • Clevis Pin, OD 3/16” x 5/8” Long	6-120 7-120	1
IC300	• • Swing Label and Web Assembly (CPR Pull)	6-130 7-130	1

Part Number	Description	Fig - Item	Qty
400057	Manifold Assembly, Short	6-140 7-140	1
400057UF	• Manifold Tube, Twin Bore	6-150 7-150	1
IC036	• Non-Return Valve Assembly	6-70 7-70	2
BP418	• Stopper	6-160 7-160	4
400053	Cell Assembly, Non-Ventilated	6-170 7-170	9
400055	Cell Assembly, Ventilated	6-180 7-180	8

2 Alpha Relief Mattress Replacement

Part Number	Description	Fig - Item	Qty
402001DAR	Alpha Relief Mattress Replacement (Dartex Cover, UK)	-	-
402003HN	Alpha Relief Mattress Replacement (Hairnet Cover, USA)	-	-
402059	Top Cover Assembly (for 402001DAR)	9-10	1
402055	Hairnet Cover Assembly (for 402003HN)	9-10	1
400064	Base Cover Assembly (for 402001DAR)	9-20	1
402302	Foam Base	9-30	1
402053	Loop Base Sheet Assembly	9-40	1
402050	Cell Assembly	9-50	17
402051	Manifold Assembly	9-60	1
IC036	• Non-Return Valve Assembly	9-70	2
BP431	• Connector, Male	9-80	1
BP432	• Connector, Female	9-90	1
IC033	• End Plug, 2-way	9-100	1
FAS167	• Clevis Pin, OD 3/16” x 5/8” Long	9-110	1
401309	• Swing Label and Web Assembly (CPR Pull)	9-120	1
402051UF	• Manifold Tube, Twin Bore	9-130	1

3 Alpha Trancell II Mattress Overlay

Part Number	Description	Fig - Item	Qty
401001	Alpha Trancell II Mattress Overlay (Standard)	-	-
401002	Alpha Trancell II Mattress Overlay (German)	-	-
401003	Alpha Trancell II Mattress Overlay (Ventilated)	-	-
401007	Alpha Trancell II Mattress Overlay (Without Cover)	-	-
401068	Top Cover Assembly (for 401001, 401002 & 401003)	10-10	1
401053	Mattress Overlay Assembly (for 401001, 401002 & 401007)	10-20	1
401069	Mattress Overlay Assembly, Ventilated (for 401003)	10-20	1
401065	Manifold Assembly	10-30	1
IC036	• Non-Return Valve Assembly	10-40	2
401300	• T-Connector	10-50	16
197301	• Connector, Straight Male/Male	10-60	2
IC033	• End Plug, 2-way	10-70	1
FAS167	• Clevis Pin, OD 3/16” x 5/8” Long	10-80	1
401309	• Swing Label and Web Assembly (CPR Pull)	10-90	1
400065UF	• Manifold Tube, Twin Bore	10-100	1

4 Alpha Trancell Seat

Part Number	Description	Fig - Item	Qty
IC004	Alpha Trancell Seat	-	-
SW314	Loop Base Sheet Assembly	15-10	1
SP034	Cell Assembly	15-20	9
SP044	Manifold Assembly	15-30	1
SW050	• T-Connector	15-40	7
SW052	• Elbow Connector	15-50	2
SP044UF	• Manifold Tube, Twin Bore	15-60	1

5 AlphaXcell Mattress Overlay

Part Number	Description	Fig - Item	Qty
IC087	AlphaXcell Mattress Overlay (Studded Cover, Euro)	-	-
IC137	AlphaXcell Mattress Overlay (Zipped Cover)	-	-
IC076	AlphaXcell Mattress Overlay (Studded Cover, USA)	-	-
IC088	Loop Base Sheet Assembly (for IC087 and IC137)	11-10	1
IC075	Loop Base Sheet Assembly (for IC076)	11-10	1
IC082	Head Cell Assembly	11-20	3
IC090	Body Cell Assembly (Non-Ventilated, for IC087 and IC137)	11-30	17
IC068	Body Cell Assembly (Ventilated, for IC076)	11-30	17
IC036	Non-Return Valve Assembly	11-40	2
IC017	Manifold Tube, Twin Bore (End Plug)	11-50	1
IC016	Manifold Tube, Twin Bore (Non-Return Valve Assemblies)	11-60	1
IC091	Manifold Tube Assembly (Pump End, for IC087 and IC137)[a] (comprises Items 80, 90 and 100)	11-70	1[a]
IC054	Manifold Tube Assembly (Pump End, for IC076)[a] (comprises Items 80 and 110 only)	11-70	1[a]
BP432	• Connector, Female	11-80	1/2[a]
BP431	• Connector, Male	11-90	1[a]
IC091UF	• Manifold Tube, Twin Bore (for IC091)	11-100	1
IC054UF	• Manifold Tube, Twin Bore (for IC054)	11-110	1
IC081	Top Cover Assembly (for IC087 and IC076)	11-120	1
IC133	Top Cover Assembly (for IC137)	11-120	1
IC129	Base Cover Assembly (for IC137 only)	11-130	1

a. Different connectors are fitted to the two Manifold Tube Assemblies (Item 70), as follows:
IC091 has 1 off BP432 (Item 80) and 1 off BP431 (Item 90).
IC054 has 2 off BP432 (Item 80) only.

6 AlphaXcell Double Mattress Overlay

Part Number	Description	Fig - Item	Qty
632001	AlphaXcell Double Mattress Overlay	-	1
632052	Top Cover Assembly	12-10	1
632057	Loop Base Sheet Assembly	12-20	1
632050	Double Cell Assembly	12-30	20

Part Number	Description	Fig - Item	Qty
632058	Manifold Tube End Assembly, CPR	12-40	2
197301	• Connector, Straight Male/Male	12-50	4
IC017UF	• Manifold Tube, Twin Bore	12-60	2
IC128	• End Plug Assembly	12-70	2
IC033	• • End Plug, 2-way	12-80	2
FAS167	• • Clevis Pin, OD 3/16” x 5/8” Long	12-90	2
401309	• • Swing Label and Web Assembly (CPR Pull)	12-100	2
632302	Valve, 90° Turn	12-110	2
627415	Valve - Stopcock	12-115	1
IC016	Manifold Tube, Twin Bore (Short)	12-120	5
IC036	Non-Return Valve Assembly	12-130	6
401300	T-Connector	12-140	2
403305	Elbow Connector	12-150	3
IC091	Manifold Tube, Twin Bore (without connectors)	12-160	2
BP431	Connector, Male	12-170	5
BP432	Connector, Female	12-180	5
SW393	Tube, Blue ID6 OD10	12-190	1

7 Aura Seat

Part Number	Description	Fig - Item	Qty
403001	Aura Seat	-	-
403050	Top Cover Assembly	16-10	1
403051	Loop Base Sheet Assembly	16-20	1
403053	Cell Assembly	16-30	9
403052	Manifold Assembly	16-40	1
401300	• T-Connector	16-50	7
403305	• Elbow Connector	16-60	2
BP431	• Connector, Male	16-70	1
BP432	• Connector, Female	16-80	1
403306	• Restrictor	16-90	2
403052UF	• Manifold Tube, Twin Bore	16-100	1

8 Turbo-Puls Mattress Replacement and Overlay

Part Number	Description	Fig - Item	Qty
BB27001	Turbo-Puls Mattress Overlay (Standard Cover)	-	-
BB27002	Turbo-Puls Mattress Replacement (Standard Cover)	-	-
BB27004	Turbo-Puls Mattress Overlay (Luxury Cover)	-	-
BB27055	Top Cover Assembly (Standard, for BB27001 and BB27002)	13-10	1
BB27064	Top Cover Assembly (Luxury, for BB27004)	13-10	1
BB27052	Loop Base Sheet Assembly	13-20	1
IC082	Cell Assembly	13-30	20
BB27054	Manifold Assembly	13-40	1
BP418	• Stopper	13-50	2
BB27054UF	• Manifold Tube, Twin Bore	13-60	1
BB27061	Base Cover Assembly (for BB27002 only)	13-70	1
402302	Foam Base (for BB27002 only)	13-80	1

9 Turbo-Puls Seat

Part Number	Description	Fig - Item	Qty
BB27003	Turbo-Puls Seat	-	-
BB27050	Top Cover Assembly	17-10	1
BB27051	Loop Base Sheet Assembly	17-20	1
BB27053	Cell Assembly	17-30	9
SP044	Manifold Assembly	17-40	1
SW050	• T-Connector	17-50	7
SW052	• Elbow Connector	17-60	2
SP044UF	• Manifold Tube, Twin Bore	17-70	1

10 ICT/6R Standard Mattress Overlay

Part Number	Description	Fig - Item	Qty
IC001	ICT/6R Standard Mattress Overlay	-	-
IC061	Loop Base Sheet Assembly	8-10	1
IC095	Cell Assembly	8-20	20
SP042	Manifold Assembly	8-30	1
BP418	• Stopper	8-40	2
SP042UF	• Manifold Tube, Twin Bore	8-50	1

11 ICT18 Mattress Overlay

Part Number	Description	Fig - Item	Qty
IC044	ICT18 (Harada) Mattress Overlay	-	-
IC109	ICT18 (Sanse Do) Mattress Overlay	-	-
IC116	ICT18 (Taiwan) Mattress Overlay	-	-
IC120	ICT18 (Ventilated, Harada) Mattress Overlay	-	-
IC045	Loop Base Sheet Assembly (for IC044 and IC120))	14-10	1
IC113	Loop Base Sheet Assembly (for IC109)	14-10	1
IC117	Loop Base Sheet Assembly (for IC116)	14-10	1
IC058	Cell Assembly (for IC044 and IC120)[(a)]	14-20	18/14[(a)]
IC090	Cell Assembly (for IC109 and IC116)[(a)]	14-20	18[(a)]
IC036	Non-Return Valve Assembly	14-30	2
IC017	Manifold Tube, Twin Bore (End Plug)	14-40	1
IC016	Manifold Tube, Twin Bore (Non-Return Valve Assemblies)	14-50	1
IC050	Manifold Tube, Twin Bore (Pump End) (for IC044, IC109 & IC120)	14-60	1
IC121	Manifold Tube, Twin Bore (Pump End) (for IC116 only)	14-60	1
IC068	Cell Assembly, Ventilated (for IC120 only)[(a)]	14-70	4[(a)]
IC107	Top Cover Assembly (for IC116 only)	14-80	1

a. There are 18 off Cell Assemblies on the ICT18 Mattress Overlays, as follows:
IC044 has 18 off IC058 (Item 20).
IC109 and IC116 have 18 off IC090 (Item 20).
IC120 has 14 off IC058 (Item 20) and 4 off IC068 (Item 70).

12 Hand Press Tool

Part Number	Description	Fig - Item	Qty
MIS143	Hand Press Tool	23-10	1
MIS142	Die Set (for Hand Press Tool - Item 10)	23-20	1
FAS169	Stud Post, Schaeffer Plastic	23-30	A/R
FAS170	Stud Cap, Schaeffer Plastic	23-40	A/R
FAS171	Stud Socket, Schaeffer Plastic	23-50	A/R
FAS152	Snap Fastener Cap, Metal	23-60	A/R
FAS153	Snap Fastener Socket, Metal	23-70	A/R
FAS154	Snap Fastener Post, Metal	23-80	A/R
FAS155	Snap Fastener Stud, Metal	23-90	A/R

CHAPTER 8

SERVICE CONTACT DETAILS

Africa

Huntleigh Africa (Pty) Ltd
Willem Cruywagen Avenue
Stand 120 , Klerksoord, Pretoria
T +27 12 542 4680
F +27 12 542 4982

Australia

Huntleigh Healthcare Pty Limited
PO Box 330
Hamilton Hill
Western Australia 6963
T +61 8 9 337 4111
F +61 8 9 337 9077

Belgium

Huntleigh Healthcare NV SA
Stapelplein 70, 9000 Gent, Belgium
T +32 9 265 8770
F +32 9 265 8771

Denmark

Huntleigh Healthcare A/S
Vassingerødvej 52, 3540 Lynge, Denmark
T +45 4 913 8486
F +45 4 913 8487

France

HNE Médical
451 Chemin de Champivost
BP20, 69579 Limonest, Cedex, France
T +33 (0)4 78 66 62 66
F +33 (0)4 78 66 62 67

Germany

HNE Huntleigh Nesbit Evans
Healthcare GmbH
Im Hülsenfeld 19, 40721 Hilden, Germany
T +49 (0)2103 97 11 0
F +49 (0)2103 97 11 80

Holland

Huntleigh Healthcare BV
Antennestraat 45, 1322 AH Almere, Holland
T +31 36 533 5588
F +31 36 547 5075

India

Huntleigh Healthcare India Pvt. Ltd
8, Shah Industrial estate
Off, Shah Industrial estate
Off Veera Desai Road
Andheri (West)
Mumbai – 400 053
India

Middle East

Huntleigh Technology PLC
307 Sh. Zayed Road
Dubai
United Arab Emirates

New Zealand

Huntleigh Healthcare Ltd
Unit 6/38 Eaglehurst Road
Ellerslie, Auckland, NZ
T +64 9 525 2488
F +64 9 525 2433

Singapore

Huntleigh Healthcare Pte Limited
Block 603, Elias Road, #08-232
Singapore 510603
T +61 8 9 309 3083
F +60 8 9 309 4582

Sweden

Huntleigh Liljenberg AB
Box 30012
200 61 Limhamm, Sweden
T +46 40 36 03 50
F +46 40 49 43 75

UK

Huntleigh Healthcare Limited
310-312 Dallow Road
Luton
Bedfordshire
LU1 1TD
T +44 (0)1582 413104
F +44 (0)1582 459100

United States of America

Huntleigh Healthcare LLC
40 Christopher Way
Eatontown,New Jersey 07724, USA
T +1 732 578 9898
F +1 732 578 9889

Huntleigh Latin America Inc
2602 North West 97th Avenue
Miami, Florida, 33172, USA
T +1 305 463 0526
F +1 305 463 0216

Spain

Huntleigh Healthcare SL
C/ de la Creueta 25
08130-Santa Perpetua de la Mogoda,
Barcelona,
T +34 93 5745754
F +34 93 5745861

Japan

Huntleigh Healthcare Japan K.K.
4-1-15 Goko-Dori
Chuoku
Kobe 651-0087
T +81 78 231 8735
F +81 78 231 8736